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CITY OF GARDENA GENERAL PLAN

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CITY OF GARDENA LAND USE ELEMENT

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COMMUNITY DEVELOPMENT DEPARTMENT

PLANNING DIVISION

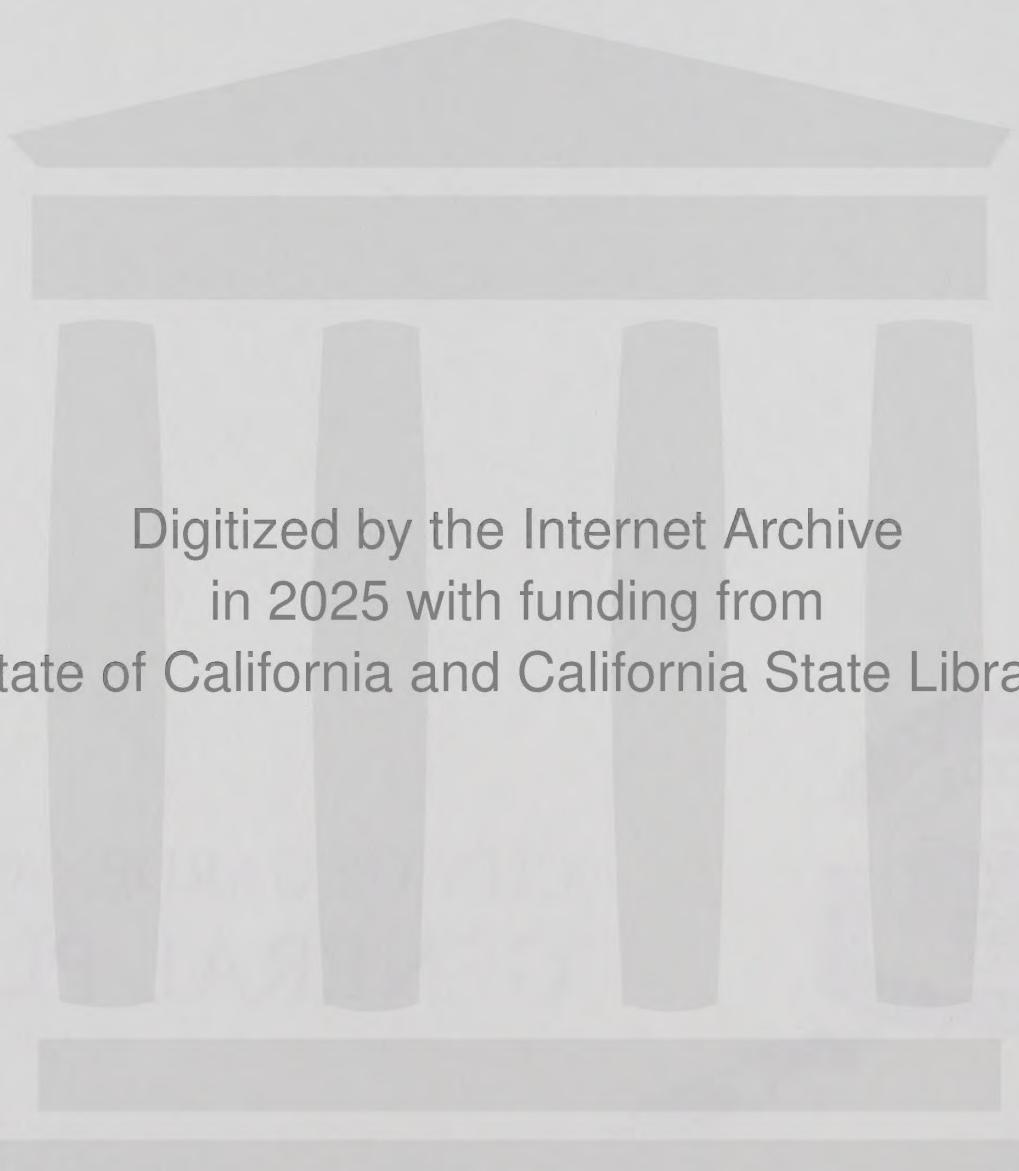


CITY OF GARDENA GENERAL PLAN

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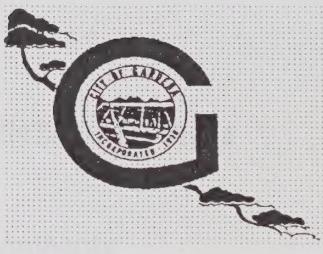
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CITY OF GARDENA

LAND USE ELEMENT

PREPARED BY

COMMUNITY DEVELOPMENT DEPARTMENT

PLANNING DIVISION

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LAND USE ELEMENT

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LAND USE ELEMENT

INTRODUCTION

Authority

The State of California has mandated, through Title 7, Chapter 3, Article 5, the requirement that city and county governments adopt a general plan. Section 65302(a) requires a land use element as part of the general plan and reads as follows:

A land use element which designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities; and other categories of public and private uses of the land. The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan which are subject to flooding and shall be reviewed annually with respect to such areas.

Purpose

The General Plan provides a policy framework to direct the development needed to serve the population within a specific jurisdiction. A well-documented general plan will allow the administrative and legislative machinery to effectively determine desired development and revitalization direction, matters of priority and emphasis for the City, and aid in problem solving while taking advantage of opportunities.

The use of land is the most all-encompassing environmental determinant. It is the aim of the Land Use Element to improve the use of the land and the relationships between uses in the best interest of the health, safety, welfare and convenience of the general public. Of all general plan elements, the Land Use Element is, therefore, the most critical; it is the foundation and culmination of the general plan system. However, it does not stand alone. Significant policy exchange and interaction must exist with the other general plan elements.

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Definition of Land Use Element

The Land Use Element provides a policy framework for the utilization or non-utilization of land for any human activity or defined purpose.

Relationship to Other Elements

There exists an inseparable relationship between the Land Use Element and all other general plan elements; this is especially true of the circulation, open space, and housing elements . The Land Use Element should serve to promote harmony and balance between and among conflicting forces of growth and change as represented by the other elements.

Every aspect of the environment is directly or indirectly affected by land use; this is true also of the social and economic sectors. Policy input affecting the other elements is essential to the effectiveness of the general plan, and is specifically required by State Law.

11. SETTING

Gardena is a city of approximately 46,000 living within a 5.26 square mile area. The city is land locked, resting on a flood plain, and surrounded by other communities in various stages of development. Mean elevation is 50 feet. The climate is moderate and rainfall averages are slightly higher than the City of Los Angeles. As part of the Los Angeles basin air quality district, Gardena shares similar problems of air pollution with the surrounding area.

The flood plain on which Gardena rests had been originally settled by ranchers and farmers taking advantage of the soil conditions and plentiful water supply. As the South Bay area grew with increased population and industrial centers, land values dictated more intense use of the land.

Gardena's geographic location near the interchange of the San Diego and Harbor Freeways makes commuter, access from the Los Angeles metropolitan area easy; it is in this way that Gardena developed into a commuter-oriented community. A relatively significant industrial base was encouraged due to freeway access, as well as proximity of Los Angeles International Airport, Los Angeles Harbor, and various railroad spur lines (see Map A).

Gardena's agrarian past, reflected in the twenty-five (25) remaining plant nurseries, has largely been replaced by low-rise residential development with supporting areas of strip commercial. In addition, the northeast and southwest areas have attracted significant small and medium industry. Less than 6 percent of

the total land area remains vacant. For this reason, demolitions have concentrated on small residential units to provide for more intensive utilization of the land. Multiple family rental units have accounted recently for the greatest amount of construction activity, but overall density remains low, at 7.3 people per acre. In terms of population growth, Gardena still maintains a small annual increase (1 to 2 percent) while the South Bay area is experiencing a 3 to 4 percent annual growth rate. Recent years has seen an ethnic shift in population, the primary cause being a regional dispersion of minorities away from the central Los Angeles area.

The low architectural and topographic profile of Gardena, together with similar development of surrounding communities, makes civic identity difficult. The City tends to blend in as part of the South Bay region with little in the way of a distinctive character.

The major land use is single-family residential, accounting for over 41 percent of the total area. A complete breakdown of land uses and vacant land by percentage and acreage is listed in Table 1.

Designated as a General Law City in September 1930, Gardena operates effectively under the City Council-Administrative Officer form of government. Four City Councilmen, the City Clerk, and the City Treasurer are elected for four-year terms. The Mayor serves a two-year term. As a body, the Council appoints an Administrative Officer who carries out Council policies and is responsible for the efficient operation of all municipal services.

III. POPULATION

The period from 1930 (Gardena incorporation) to 1974 has seen the population grow from 3,000 to over 46,000. Average population growth for this period was 1094 persons per year, or roughly 2.4 percent. It must be emphasized that growth has not been constant and more recently, increases have been tapering off.

Population forecasts for Gardena during its most expansive years were a simple matter. Vacant land and development policy in and around the City provided no complex restrictions on growth, but this is no longer true.

Available vacant residential land in Gardena amounts to less than 15 acres (2 acres R-1, 0.7 acres R-2, 7.2 acres R-3, and 3.6 acres R-4). Assuming maximum coverage allowed by current zoning code, vacant residential land can support a maximum population increase of 1,120.

External factors now weigh more heavily on Gardena's population trends. Regional migration trends will influence demand for residential units, and this demand will dictate the economic feasibility of demolition of older single and multiple units for rebuilding to higher densities. Because of this fact, migration figures for Los Angeles County and the South Bay area are significant (see Table 2). These figures indicate that substantial encouragement for intensifying development may not continue, or at least not to the extent of previous growth.

Southern California led the nation in net migration during the 1950's and early 1960's, but has since declined as an attractor of migrants. Yearly declines of net migrants began in the late 1960's and has now reached a stable period. Changes since 1960 show that the continuing trend is for persons to move away from large metropolitan counties to the outlying counties. The fastest growing counties are those directly adjacent to Los Angeles. Recent data shows also that central cities are losing population at rising rates not only in Los Angeles County, but also in the adjacent counties.

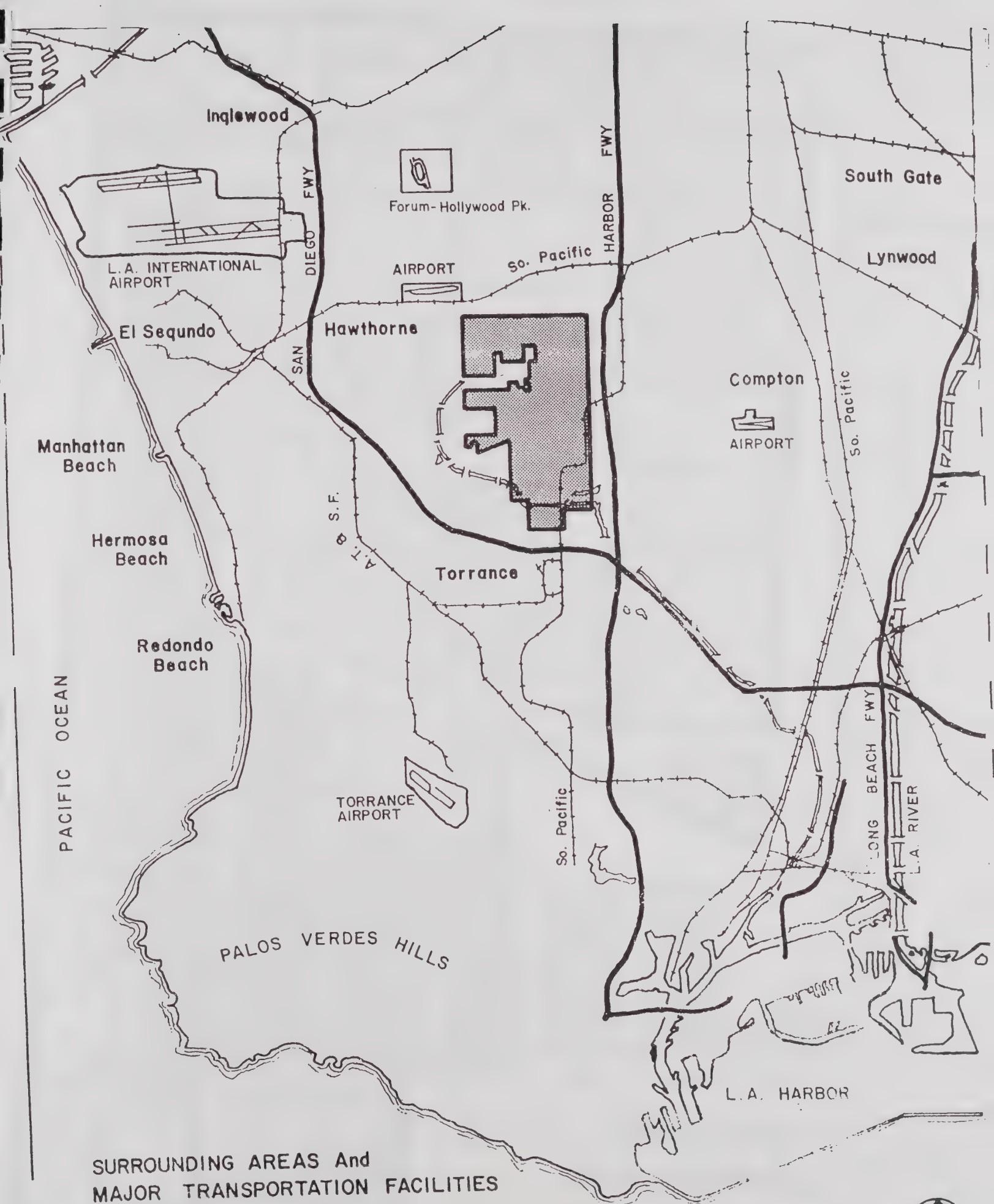
The South Bay area which experienced the highest growth in Los Angeles County during the 1960's is also tapering off--a net percentage increase of 3.4 percent was experienced between April 1970 and January 1973 as opposed to 12.6 percent for the previous 3-year period. Single-family units have actually decreased from 50,183 to 49,506 though multiple units have more than compensated. The trend to multiple units reflects many factors such as land values, interest rates, construction costs, life-style trends, and family size. Decrease of in-migration coupled with declining fertility rates are characteristic of the entire Southern California area.

The period from 1967 to 1973 (our most recent trend period) has seen a net decrease in single-family residential units in Gardena of 115, while apartment units show a net increase of 863, or 123 units per year (see Table 4). It is obvious that Gardena is paralleling regional trends of slowing population increases occurring simultaneously with density increases. Density increases currently account for approximately 250 people per year.

What does all this mean for future population growth? In terms of maximum, potential growth for Gardena, there are three (3) factors to consider: available vacant residential land, density increases, and annexation of adjoining county area (see Map B). These factors have been included in Table 3. Alternatives to maximum growth would most likely have to be directed toward density stabilization as it is the most significant and variable growth factor.

In summary, it can be said that though population growth trends in Los Angeles County indicate a stabilization of population, certain areas such as the South Bay region will continue to attract population, though at an increasingly reduced rate. Gardena's growth pattern will parallel that of the South Bay, but considering it is one of the older and more completely developed communities in the area, growth will be less significant. Density increases (apartment construction) will gradually reduce the number of single-family dwellings, but the demand for this change will depend to a great deal on regional migratory trends.

If regional migratory trends force a growth situation in Gardena, several steps can be taken to reduce the impact. The residential development policy section of this element includes such steps.

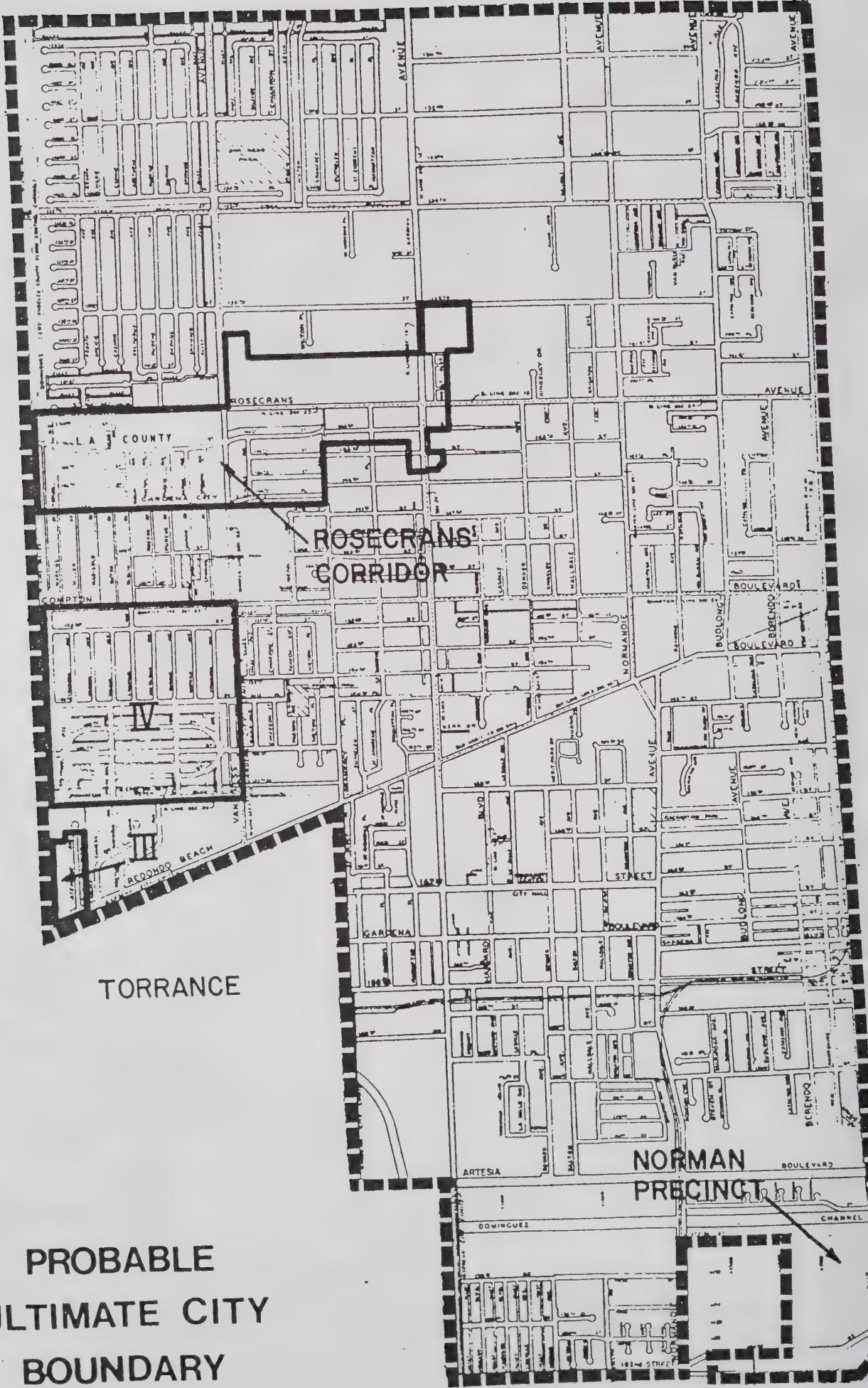


SURROUNDING AREAS And
MAJOR TRANSPORTATION FACILITIES

City of Gardena
MAP 'A'



HAWTHORNE



**LAND USE SUMMARY
and
AVAILABLE VACANT LAND (by current zone)**

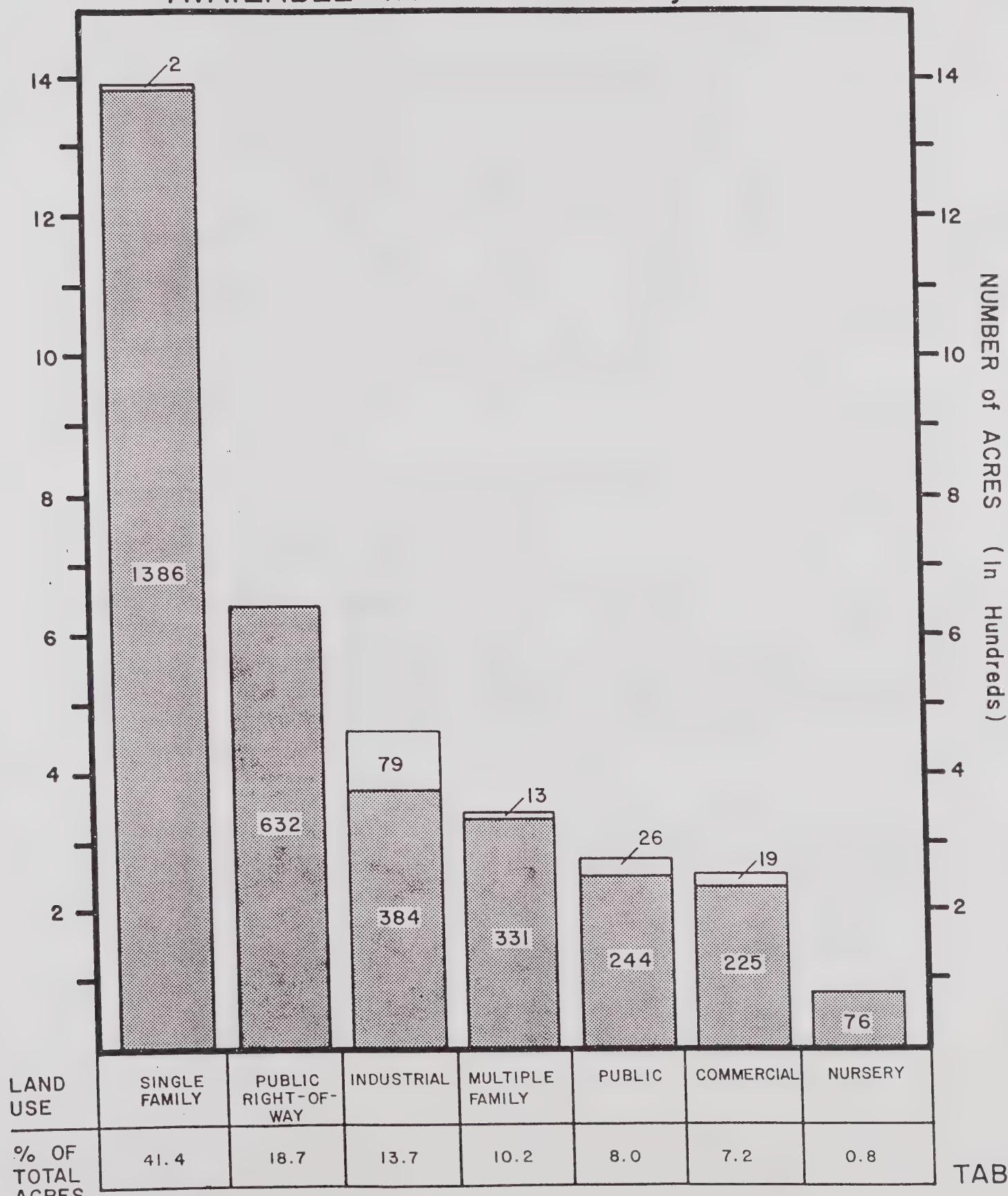


TABLE I



LAND USE

TOTAL ACRES: 3367



VACANT LAND

5.26 Square Miles

TABLE 2

Population Change (1960-1970)

	<u>1960</u>	<u>1970</u>	<u>No.</u>	<u>%</u>
Los Angeles County	6,071,900	7,034,200	962,400	+15.8%
South Bay	733,647	916,000	172,353	+18.8%
Gardena	35,862	*44,536	8,674	+19.4%

* Includes Annexation 69-1

Population Change (1970-1972)

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>No.</u>	<u>%</u>
Los Angeles County	7,034,200	7,031,200	6,966,900	67,300	- .9%
South Bay	916,000	929,000	946,000	30,000	+3.1%
Gardena	44,536	45,267	45,353	817	+1.8%

TABLE 3

GROWTH PROJECTIONS

	<u>1980</u>	<u>1990</u>
June 1973 Population	45,919	45,919
Available Vacant Land	1,120	1,120
* Annexation Areas (4)	7,059	7,059
Density Increase (avg.) at 250 per year	<u>1,875</u>	<u>5,375</u>
TOTALS (without annexation)	49,914	52,414
**TOTALS (with annexation)	56,973	59,473

- * The 4 areas listed will likely be annexed by 1980. They are: Rosecrans Corridor (74-1) -----2,973; Norman Precinct (73-2)--722; Residential area south of Rosecrans and east of Crenshaw - 3,235; Corner of Redondo Beach Boulevard and Crenshaw --- 129. Total Additional Population - 7,059.

- ** The 4 areas listed are totally developed with the majority of land zoned R-1. No significant population increases should be experienced in these areas and the current totals have been carried as a constant through 1990.

IV. LAND USE PROBLEMS

A. Commercial

Most commercial facilities in Gardena parallel main traffic thoroughfares (strip commercial). Though adequate in terms of fulfilling the day to day shopping needs of the community, these establishments have many detrimental features in general. Also sources for purchase of many specialized items and major purchase items are inadequate.

Strip commercial, by its very nature, presents vehicle circulation problems, parking ingress and egress, often conflicts with on-street traffic, and competitive signing which tends to be obtrusive. The age of many commercial buildings is reflected in the fact that the automobile-oriented consumer has been an afterthought; off-street parking is frequently inadequate-- a result of a lack of planning and fore-sight. Traffic congestion on main streets is compounded due to full utilization of on-street parking spaces. Landscaping is rarely considered in these areas. All primary traffic arterials are characteristic of these problems with Gardena Boulevard and Western Avenue as classic examples.

Since 1968, the number of "shopping centers" has more than doubled. These shopping centers are usually dominated by a large supermarket with smaller retail businesses occupying the remaining lot area. As opposed to the smaller strip developments along the same streets, these projects usually have adequate parking and token landscaping. Signing still tends to be competitive and these developments cannot be considered as having the qualities necessary to enhance the environment. They are still "strip" in nature, designed to serve the immediate area and with no facilities to serve a regional patronage. Overall quality seems to be the most critical problem with the newer developments.

Lack of buffer zones is another problem with Gardena's commercial developments. Many face residential areas or are back to back with residential, producing unpleasant conflicts of noise, traffic, etc.

Gardena is in need of pedestrian-oriented shopping facilities capable of providing convenience and variety within a concentrated walkable area and pleasing environment. Economic studies have concluded that a "major" department store is probably not feasible due to overlapping and competitive markets from various regional shopping centers such as Del Amo in Torrance, however, specialty stores and medium-size stores partially replacing existing sub-standard developments could fulfill community needs and be developed into pleasing areas.

B. Industrial

A survey of existing industrial developments indicates many planning problems. Industry is dispersed in various locations with three major concentrations--the northeast section, roughly bounded by El Segundo, Rosecrans, Van Ness, and Budlong, the central area, south of 166th Street between Gramercy Place and Normandie Avenue, and the southern area, or from 178th Street to 182nd Street, generally known as the Inter-Urban Tract.

The Central area is an area of single-family residences, mobile home development, commercial uses, and industrial buildings. United Parcel and Honeywell are the largest industrial firms in this area. Only one through street traverses this area from Western Avenue to Gramercy Place and many of the lots are long and deep.

The northern area is plagued by mixed uses with older residential units and poor-quality trailer parks adjoining industrial lots. This area was annexed by the City in 1969. Poorly maintained and inadequate streets service the area and there are few sidewalks. Parking is inadequate and vacant lots are commonly used to accommodate overflow. The older existing industrial developments create the greatest problems while some newer structures are of high quality, lots are sufficient in size to accommodate medium industrial uses and this area is considered to have the greatest potential as a high-quality industrial area.

The southern portion of Gardena exhibits many of the same problems such as mixed uses, though curbs and sidewalks are more common. Streets are narrow and accommodation of heavy trucks presents problems. Among the older industrial structures, machine shops are very common. Noise pollution from this type of industrial activity further compounds the problems of adjoining residential. Living conditions for the residents are further degraded due to a railroad spur line and the presence of dog kennels. It is questionable whether quality industry could be encouraged in this area as lot sizes are too small for substantial companies. No buffers exist, either physical or visual, between industrial and residential uses.

C. Residential

Existing housing stock is dominated by single-family residential units, but these units are largely older and will be vulnerable to deterioration. The main thrust of residential construction in the last few years has been apartment structures of varying size and quality, and there are many indications that multiunit construction will continue to outpace single family units (see Tables 4 and 5).

The single-family character of Gardena will be threatened if current trends continue.*

Alternative housing types such as cluster or townhouses have not developed in this area. Multiple apartment units are presenting density problems in certain sections of the City, largely replacing obsolete single-family structures.

Quality problems of residential areas, i.e., lack of landscaping, parkway trees, physical deterioration together with density concentrations present the greatest threats to livability overall. Mixed uses present the greatest problems, most notably in the industrial areas and along the main corridors of travel where buffers between commercial and residential are lacking.

Adequate low-cost housing is needed to replace dilapidated units mainly in the areas of mixed housing and industrial uses.

D. Public, Semi-Public

Public facilities have kept pace with population increases on an overall basis. As density increases have been confined to limited areas, public facilities have tended to be overburdened in these areas. Some neighborhoods have been classified as deficient in parks and recreation facilities (see Open Space & Recreation Element).

Construction is nearing completion on the new Community Center building and gymnasium in the Civic Center Complex. These facilities are designed to serve the entire community but provide nothing for easily available, local recreation needs. City Hall, built in 1963 is adequate for the present City staff, but is utilized to maximum capacity at this time. Further additions to City staff will overburden this facility and require additional building area.

Gardena's two fire stations, one in the Civic Center Complex, and a second on 135th Street, provide adequate coverage for the City. Police Headquarters located in the Civic Center have become crowded as population and police staff have grown and the jail is considered inadequate.

*A large portion of Gardena's residential acreage is not built to maximum capacity (in terms of zoning) at this time. If apartment construction continues to replace single-family units, municipal service systems will be unable to handle increased demands police staff have grown and the jail is considered inadequate.

Neither the fire nor police departments have difficulty covering the 5.26 square miles of Gardena from their current locations which are considered ideal in terms of centralization.

Community identity on a visual level is lacking in Gardena. The Civic Center cannot be seen unless one is directly in front of it due to the low profile of civic structures, surrounding structures, and the fact that its location is not on or visible from main traffic thoroughfares. As previously stated, Gardena's low profile blends with surrounding communities and boundary identification is lacking. The Gardena Chamber of Commerce has erected several gateway signs, the best being on Redondo Beach Boulevard and Vermont Avenue entrances, but these are not of adequate distinctiveness or size.

Churches and schools are distributed throughout the community and can be considered adequate in capacity and location. Gardena schools are part of the Los Angeles Unified School District (see School Locations Land Use Map).

E. Economic Issues

Census data indicates that 21 percent of the City's employed heads of household work within the City and the current employed work force numbers approximately 18,000 (see Land Use Analysis Tables 6 and 9).

There are approximately 4,200* business establishments within the City at the present time. The City's largest single employment factor is the manufacturing industry, with 5,600** employees.

The foregoing data clearly indicates that Gardena is predominately a residential community within a framework of the total Los Angeles economy, even though it contains a significant amount of manufacturing and commercial activity. The City has a considerably greater number of employed residents than it has employees -- over 40 percent more.

* Source - City License Department

** Source - Gardena Valley Chamber of Commerce

Gardena's retail commercial economy is fairly healthy, producing an average 10 percent increase in total retail sales for the past 10 years (see Table 6). Unfortunately, the City has no major shopping facilities that are regional in nature. That portion of the Gardena market demands is filled by regional centers in Torrance and Carson. Home furniture, appliances, and other large items are purchased outside the City with the exception of automobiles and related accessories. If any deficiencies in commercial activity exists, they are, therefore, in the major pedestrian-oriented shopping center category. Since the Gardena Boulevard area has been outdated and is in a state of deterioration, pedestrian convenience shopping has been lacking. A major shopping area, oriented to the pedestrian, would satisfy both the above deficiencies. Two potential locations exist to satisfy these deficiencies and will be discussed further under goals and objectives.

In the manufacturing area, Gardena has a substantial base with petrochemical and plastics products leading in production. Considerable efforts are required to bring the quality of manufacturing areas to acceptable standards. Proper encouragement could be very productive in this area considering the greatest amount of available vacant land is zoned for industrial uses (approximately 80 acres).

A large source of revenue for the City and significant employment source as well, is the six (6) draw poker clubs. This unique industry has been in existence in Gardena since 1936 and is regulated by City and State Laws. In addition to card game facilities, each club maintains a restaurant on the premises. The combined employment figure for all clubs exceeds 1,500, many being local residents.

The economic health of the City's population is fairly good with a mean family income of \$12,212 in 1970 (6th highest in the South Bay area). White collar occupations (professionals, managers, and administrators constitute approximately 22 percent of the labor force). This high percentage rate of professionals is also reflected in the high median education (12.2 years). There is, however, a critical area of poverty within a 5 percent of the population contrasting the high City average figures.

ZONE YEAR	DEMOLITIONS				NEW CONSTRUCTION			
	R-1	R2,3,4	C	M	R-1	R2,3,4	C	M
1967	37	*10	14	0	6	*17	5	10
1968	23	12	9	1	10	35	8	11
1969	41	8	24	3	80	66	10	7
1970	24	9	6	2	4	163	10	6
1971	36	8	16	4	2	241	4	10
1972	46	4	10	0	5	112	9	8
1973	22	20	9	0	7	300	2	18
TOTAL	229	71	88	10	114	934	48	70

* HOUSING UNITS

CONSTRUCTION TRENDS

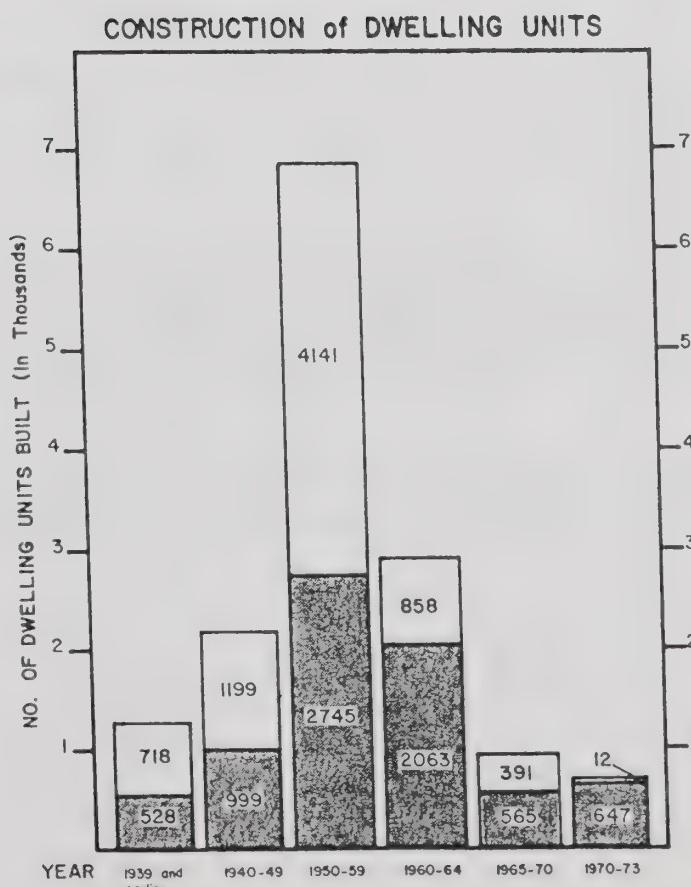


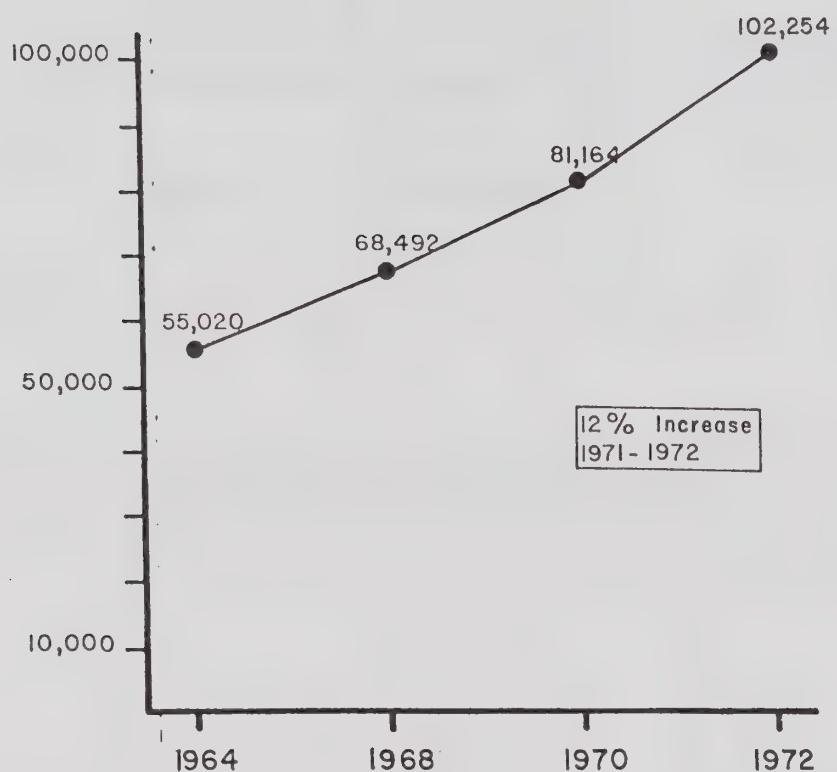
TABLE 5

Single Family House
 Multiple Unit

Total Dwelling Units
1973 - 17,141

TABLE 6

TOTAL TAXABLE RETAIL SALES
(in thousands)



V. LAND USE PLAN

The proposed land use plan encompasses the City of Gardena and surrounding unincorporated Los Angeles County areas which are deemed to be within the sphere of influence of Gardena (See Land Use Plan in back of book). The latter includes the following County areas (see Map B):

- Southeast --- area bounded by Vermont Avenue, Normandie Avenue, Electric Avenue and Los Angeles City. (Norman Precinct)
- Central --- both the north sides of Rosecrans Avenue from Western Avenue to Crenshaw Boulevard. (Rosecran Corridor)
- West --- the area bounded by Crenshaw Boulevard, Compton Boulevard, Van Ness and Manhattan Beach Boulevard (Area IV)
- Southwest --- the northeast corner of Redondo Beach Boulevard and Crenshaw Boulevard (Area III)

The Conservation and Planning Law of the State of California, Section 65300 provides for the inclusion of such areas in the General Plan of a City. Said section states in part that "... City shall adopt a comprehensive long-term general plan for the physical development of ... the City and of any land outside its boundaries which in the Planning Agency's (Planning Commission) judgement bears relations to its planning".

The major objective of the proposed Land Use Plan is to promote a balanced interrelated and compatible network of land uses and to address current problems and fulfill future needs. Primary purpose is to provide for quality development. It sets forth community goals and recommends policies and program to attain such goals. The Land Use Plan is a guide for long term orderly City development.

Information and recommendations obtained from both the Citizens Advisory Committee and Citizens Committee for Zoning Revisions were extremely valuable in formulating the Land Use Plan. The goals and objectives as well as many of the land use development policies were developed through information generated by both groups. Broader citizen participation is anticipated during the public hearings before the Planning Commission and City Council.

The Land Use Plan does not propose drastic overall changes of the existing land use arrangement since the basic pattern has already been established and the City almost entirely developed.

Major changes are recommended in those areas where the pattern of land areas are definitely incompatible and detrimental to public health, safety, and general welfare and in areas where the zoning is inconsistent with the present land uses. Definitions of the various categories of land use shown by the plan are as follows:

1. Low Residential Density – Single-family residences with a density between 4 to 8 dwelling units per net acre.
2. Medium Residential Density - single, duplexes, multiple-family residences with a density between 9 to 30 dwelling units per net acre.
3. High Residential Density - Primarily multiple-family developments with 31 dwelling units or more per net acre.
4. Highway Commercial - Consisting of retail and general commercial uses oriented to the automobile and the travelling public.
5. Community Commercial - Consisting or retail uses such as super market, junior department store, etc., administrative and professional offices, convenience commercial uses grouped together into one unit.
6. Neighborhood Commercial – Consisting of retail and convenience commercial uses grouped together to one unit and generally serving adjacent and nearby residential neighborhood.
7. Light Industrial - Means light manufacturing, storage warehousing and manufacturing uses which are relatively quiet and free of dust and odor. Excludes heavy, hazardous, and/or obnoxious industrial activities.
8. General Industrial - Consisting of medium to heavy industrial uses except those uses which are dangerous and hazardous and excessive environmental pollution.
9. Governmental and Service Facilities - Means City, County, State, Federal, and other governmental facilities, including utilities right-of-way and uses related to government and community facilities.
10. Residential – Business - is an area of mixed single family residential and business and industrial uses of limited size and intensity.

Focus of the land use map and program is on the land use development opportunities and potentials area setting directions for growth and change. The principal features of the proposed land use plans are as follows:

Commercial

1. Recommends the development of a community shopping facility on the south side of Redondo Beach Boulevard between Vermont Avenue and Normandie Avenue. Consideration should be given to a pedestrian-oriented, integrated, commercial facility with open parking or parking structure.
2. Recommends a high quality commercial development along Redondo Beach Boulevard with high standards with landscaping, architecture, and circulation design.
3. Recommends the revitalization of Gardena Boulevard with improved circulation, additional off-street parking and enhancement of aesthetic and architectural features.

Industrial

1. Recommends the development of the Retention Basin located between 135th and 139th Streets just east of Van Ness Avenue into an industrial park.
2. Recommends the improvement of North Gardena industrial area through installation of street improvements, trees, and elimination of non-conforming uses.
3. Recommends portions of Interurban Tract industrial area be recycled and new, innovative land use techniques be applied to encourage high quality of development.

Residential

1. Recommends the preservation and protection of single-family areas.
2. Recommends the development of low to medium-density apartments to avoid overburdening the utilities, streets, and community services.

3. Recommends limited high density developments in close proximity to neighborhood commercial shopping areas and along major or secondary streets.

Public Facilities

1. Recommends a "Civic Center Development Area" which will accommodate future expansion of City facilities and the development of related civic center type land uses such as semi-public and cultural facilities, professional offices, and other commercial uses.
2. Recommend several future open spaces and recreational facilities throughout the City. It should be noted that the symbols do not represent a specific location where the facilities are to be developed. Further studies would have to be conducted to determine the precise location and size of such facilities. (See also Open Space Element).

VI. GOALS

1. To improve and preserve the unique and fine qualities of Gardena such as its agrarian past and ethnic history.
2. To promote the health, safety, and well being of the people of Gardena by adopting standards for the proper balance, relationship and distribution of the various types of land uses, and by formulating and adopting a property long-term capital improvement program.
3. To maintain a well-balanced community offering planned and protected residential districts, an adequate parks and recreation system for all age groups, facilities for cultural pursuits, well-distributed commercial areas, planned and restricted industrial area, and a coordinated circulation system for the fast, safe and efficient movement of people and commodities.
4. To establish a basis for the urban revitalization program for the purpose of correcting, where necessary, blight in residential, commercial and industrial areas through the combined efforts of private enterprise and local government.
5. Use government assistance programs to maintain a balanced population structure within the City and in particular to maintain single-family housing resources, particularly in areas currently subject to decline.
6. The direct stimulation of the private investment sector by the City to optimize current investment resources, particularly within the Gardena Boulevard/Redondo Beach Boulevard and the existing industrial areas, in order to strengthen the economic base of the City, revitalize and increase the supply of job opportunities.

VII. COMMERCIAL OBJECTIVES

1. To increase City's sales tax revenues by keeping and attracting shoppers.
2. To promote the development of high-quality commercial facilities with adequate parking and shopper amenities
3. To improve the convenience, safety, and accessibility of commercial activities.
4. To preserve and maintain existing neighborhood shopping facilities and to re-zone and/or recycle unproductive commercial areas.
5. To eliminate non-conforming uses in commercial areas.

POLICIES

1. Require landscaping, its maintenance, and upkeep in all new commercial developments.
2. Adequate off-street parking and loading spaces shall be provided for commercial developments.
3. Joint off-street parking agreements should be encouraged to eliminate the excessive amount of individual driveways and to provide efficient circulation and safer ingress and egress.
4. New strip or highway zoning should be discouraged. Unneeded commercial areas should be rezoned for more appropriate uses.
5. Development of specialized commercial centers such as banks, medical and professional offices in exclusive complexes should be encouraged.
6. All utilities shall be placed underground.
7. Mixed commercial and residential uses should be permitted under specially designed conditions.
8. All commercial facilities shall be maintained in accordance with minimum health and safety code requirements.
9. Non-conforming uses shall be removed before conforming commercial uses are developed.

10. The City should aid local residents in establishing new enterprises and assist existing businesses in achieving maximum growth.
11. Commercial areas adjoining residential developments shall be adequately buffered by landscaping, walls, or separated by parking lots.

PROGRAM

1. Adopt new zoning regulations for:
 - a. Comprehensive sign ordinance.
 - b. A flexible system of architectural review and control on all proposed commercial facilities.
 - c. A landscaping design standards for parking lots.
 - d. A planned community development provision which requires master planning of total site plan development on all future commercial areas.
 - e. Special provision to deal with problems unique to Gardena such as deep lots, strip commercial zoning, Gardena Boulevard commercial area, etc.
2. Institute a vigorous and comprehensive code enforcement program, which must be consistent and fair, with stated goals and objectives.
3. Revitalization and upgrade Gardena Boulevard commercial area making it a viable, attractive, and people-oriented commercial district. Consideration should be given to additional parking, improved circulation, aesthetic architectural improvements, zoning, and shopper amenities.
4. Develop a precise plan for the development of Redondo Beach Boulevard and a program for implementation of such plan. The plan should consider arrangement of land uses, design standards, circulation, off-street parking facilities, and street improvements.
5. Also, in conjunction with the above, explore the possibility and feasibility of creating a community shopping center in the area bounded by Redondo Beach Boulevard, Vermont Avenue, 155th Street, and Normandie Avenue. Consideration should be given to expansion of the present shopping facilities on the south side of Redondo Beach Boulevard and integrating the entire area into one large planned commercial area.

6. Adopt an abatement program for the elimination of non-conforming uses. Such program should be fair and equitable and provided for the amortization of non-conforming uses based upon the land use and value of the improvements.
7. Utilize redevelopment program, Housing and Community Development Act grant, and other federal and state resources to assist in rehabilitation and revitalization of blighted commercial area.

VIII. INDUSTRIAL OBJECTIVES

1. To attract the kinds of industrial uses which will be economically beneficial to the community as well as enhance the environmental quality of the City.
2. To protect existing industrial land from encroachment by residential or other incompatible developments.
3. To encourage the construction of high-quality, well designed industrial developments through adoption of good property development standards and provision of community services and utilities.
4. To encourage the rehabilitation of existing substandard, blighted industrial areas through the combined efforts of private and public sectors.
5. To preserve and maintain a balanced diversified industrial base.

POLICIES

1. Adequate off-street parking for both employees and customers and loading areas shall be required for industrial development.
2. That all utilities shall be placed underground.
3. New industrial developments should be encouraged to provide landscaping in parking areas and around the buildings whenever possible.
4. Where industries are located next to residential-zoned developments, the former shall install appropriate walls and landscaping to serve as buffers or provide building setback or parking areas as alternative measures.

5. All outdoor storage shall be properly screened by fence, walls, or landscaping.
6. All industrial developments shall be served by water, sewer, utilities, and a full complement of community services.
7. New industrial developments shall meet seismic safety standards and regulations. Furthermore, same shall be required to comply with noise, air, water, and environmental regulations.
8. New industries should have good accessibility to secondary or major transportation routes.
9. Offensive and hazardous industrial uses should be restricted as to locations and appropriate regulations adopted to minimize hazards.
10. Employee recreational facilities should be provided for large industrial developments.
11. Residential uses shall be prohibited in the industrial zones.

PROGRAM

1. Establish an economic development program to promote, encourage, and attract new industries and businesses to locate the City through the combined efforts of the City, Chamber, and key representatives of the private sector.
2. Secure Economic Development Administrative grant for public works improvements which will result in substantial economic growth of our industrial areas.
3. Utilize zoning, land use controls and redevelopment to stimulate industrial development and to eliminate non-conforming uses.

A. New Industrial Development

1. Planned unit development to permit concentrations of industries as well as a higher utilizations of industrial properties.
2. Overlay zones to allow greater flexibility of uses while opening guidelines for setbacks, building height, access, parking, and open space development.

- B. Non-conforming uses
 - 1. Program to abate or remove non conforming uses through amortization method.
 - 2. Prohibit new industrial development until non-conforming uses removed.
- 4. Encourage the development of the Retention Basin as a high-quality planned industrial park.
- 5. Develop detailed urban design plans for the three major industrial areas:
 - A. North Gardena
 - B. South Gardena
 - C. West Gardena

For each area, the following program should be considered:

North Gardena

- 1. Capital improvement program to improve streets.
- 2. Environmental improvement such as landscaping, street trees, noise and air regulations.
- 3. Code enforcement and revitalization and rehabilitation in some areas.
- 4. Improve sewer and water systems.
- 5. Abatement of non-conforming uses.

South Gardena

- 1. Consolidate of small lots into larger parcels.
- 2. Environmental Improvements
- 3. Redesign circulation systems.
- 4. Abatement of non-conforming uses.
- 5. Code enforcement and rehabilitation.
- 6. Establish new zoning classification for a portion of Inter-Urban Tract (General area bounded by 178 Street, Denker Avenue, 182nd Street and Hobart Boulevard.

Many property owners feel this area is unique and different from other areas with its mixed residential, industrial and kennel uses; therefore, it should not be totally

developed as an industrial area. Consideration should be given to new and innovative zoning allowing flexibility development and combined land uses in harmony with the character of the area. For this reason, the general area bounded by Hobart Blvd., 178th Street, Denker Avenue and 182nd Street should be designated as a residential-business land use classification. Remaining portion of the Inter-Urban Tract should be maintained for light industrial use. General objectives, policies and programs of the residential-business land use are contained on page 32.

West Gardena

1. Stabilization program.
2. Environmental improvements.
3. Abatement of non-conforming uses.
4. Reduction of commercial sprawl.

IX. RESIDENTIAL OBJECTIVES

1. To preserve and protect existing single-family residential developments.
2. To provide uniform and high-quality park and recreational opportunities to all areas of the City.
3. To preserve and maintain the City's low-medium density residential and low building height profile and character.
4. To promote construction of high-quality residential developments with ample open space, leisure, and recreational facilities.
5. To foster the development of a variety of housing types and price ranges to meet the requirements and desires of the City's various age, income and ethnic groups.
6. To encourage the development of viable, attractive neighborhoods free from blight and deterioration.

POLICIES

- Propose the following residential density standards:

Low -	4-8 D.U./net acre
Medium -	9-30 D.U. /net acre
High -	31+ D.U. /net acre
- Encroachment of medium and high density residential developments into single-family areas shall be prohibited.

- Appropriate buffers such as walls, landscaping, parking lots, etc. shall be provided between single-family developments and industrial and commercial areas.
- Improperly zoned high density residential areas should be rezoned to lower density.
- Low density areas shall be preserved and zone changes to a higher density should be discouraged.
- New medium and high density developments shall be located near neighborhood and community shopping centers with a commensurate high level community services and facilities.
- Parkway trees shall be planted in all residential streets.
- Concerted public and private action should be directed toward upgrading and rehabilitation of older dwellings and toward the demolition of substandard units.
- Innovative land development and design techniques and new material and construction methods should be encouraged to stimulate residential developments.
- Residential developments shall be prohibited in areas which are deemed unsafe due to seismic and geologic hazards.
- Promote the development of specialized housing for the elderly.
- To prevent deterioration and blight, properties should be properly maintained at all times.

PROGRAM

1. Develop Housing Code Administration program to upgrade declining housing and to maintain high quality housing stock.
2. Develop a program to rehabilitate and revitalize blighted residential area.
3. Implement the following code amendments:
 - a. Reduce R-2 and R-3 zone densities.
 - b. Adopt parkway tree ordinance.
 - c. Upgrade outdoor living space standards and require more functional recreational and leisure areas.

- d. Adopt landscaping standards for multiple family residential developments.
 - e. Establish design guidelines for development of deep and narrow lots.
- 4. Investigate innovative residential design of other jurisdictions to discover which provisions would best fit Gardena's situation and needs.
 - a. Condominiums
 - b. Townhouse
 - c. Planned unit development
 - d. Other approaches
- 5. Investigate and develop incentives for developers who assemble lots for new developments.
 - a. Permit increased densities.
 - b. Relation of yard requirements.
- 6. With the aid of residents, establish neighborhood planning groups throughout the City. Develop precise neighborhood plans together with neighborhood improvement programs. The City should assist neighborhoods to implement programs.

X. GOVERNMENTAL & SERVICE FACILITIES

OBJECTIVES

- 1. To provide the highest and most efficient level of public services financially possible.
- 2. To promote City appearance and cultural heritage programs.
- 3. To develop public programs and facilities which still meet the needs of the City's various age, income, and ethnic groups.
- 4. To improve City's liaison with County, State, and special agencies that provide public services and facilities.
- 5. To develop the highest levels of transportation service through provision of adequate facilities and capacity for safe and efficient movement of persons and goods while maintaining a balance between land use and travel requirement.

5. To develop the highest levels of transportation service through provision of adequate facilities and capacity for safe and efficient movement of persons and goods while maintaining a balance between land use and travel requirement.

POLICIES

1. The development of parks, open space, and recreational facilities should be consistent with the guidelines, policies, and programs of the Open Space and Recreation Element.
2. Parks and recreational facilities should be located within walking distance of every household of the neighborhood it serves.
3. All new public buildings shall have adequate off-street parking spaces to accommodate employees and the public.
4. All public facilities and utilities should be designed to enhance the appearance of the surrounding areas in which they are located.
5. Sidewalks shall be installed in all areas of pedestrian travel at the earliest possible date.
6. Utilization of utility easements (flood control, power line rights of ways) for recreational, open space, and beautification purposes should be explored.
7. The City should encourage the preservation of historical and cultural sites and monuments.
8. A uniform and high quality of street lights shall be provided in all areas of the City.
9. The City should work toward the development of a health center within the City limits.
10. A new facility should be constructed to house both the bus and public works garage operations.
11. A circulation element consisting of general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities shall be prepared and correlated with the land use element.

PROGRAMS

1. Establish a "Civic Center Development Area." It is suggested that this area include the City Hall, garage facilities, City gymnasium and auditorium, Denker Avenue Elementary School, Municipal Activities Center, Library and other future public and semi-public facilities. Other land uses such as professional offices, cultural facilities, and related commercial uses which complement the Civic Center Complex are recommended for this area. The areas on both sides of Western Avenue from 162nd Street to 166th Street have been included within the Civic Center Development Area because it appears to be an integral part of the Civic Center environment. Upgrading and revitalization of this area would enhance and encourage further improvements and development in the general area.
2. Solicit federal and state grants to assist in the construction and development of open space, parks, recreation, and public facilities.
3. Conduct studies to determine feasibility of utilizing vacant City-owned land for temporary recreational and open space use, or other more permanent uses which is compatible with the surrounding neighborhoods.
4. Create a Cultural Arts and Historical Preservation Commission to identify and locate cultural and historical monuments and sites and to develop a program for the preservation and enhancement of same.
5. Coordinate public improvements and beautification efforts with service and citizens groups and organizations who are interested in upgrading the community.
6. Adopt action programs which will provide for planting of trees in all the City streets, landscaping of median strips in major and secondary highways, improvement and beautification of parking lots, railroad right of way, unsightly wall and vacant lots.
7. Adopt a comprehensive sign ordinance which will regulate the quantity, quality, and location of signs.
8. Establish a long-term program for eventually placing all utilities underground.

9. Develop an active program to beautify the major entrances to the City. It is suggested that Redondo Beach Boulevard at Vermont Avenue be the initial project. Landscaping and an attractive monument with the City's name and other design features would heighten the City's identification. Singular treatment could be given other major entrances to the City.
10. Prepare a Community Design element to guide and stimulate beautification throughout the City. Such element should include design standards and principals for City signs, street furniture, designs for community and neighborhood development and redevelopment, including sites for parks, playgrounds and other uses.
11. Encourage active and continuous citizen participation in all phases of the planning program and activities.

XI. RESIDENTIAL – BUSINESS OBJECTIVES

1. To preserve and maintain the residential character of residential-business areas.
2. To provide an environment where a small business operation can co-exist with a residential use.
3. To encourage the construction of high quality, well designed residential-business developments by means of the conditional use permit.
4. To localize kennel operations within the area generally bounded by Denker Avenue on the east, the alley between LaSalle Avenue and Harvard Boulevard on the west, 178th Street on the north, and 182nd Street on the south.

POLICIES

- Adequate off-street parking for both residential use and business use shall be required for residential-business development.
- All residential-business developments shall be encouraged to provide landscaping.
- All outdoor storage shall be properly screened by fence or wall.
- All business or industrial activity should be conducted within an enclosed area.
- All non-residential activities should be confined to the rear one-half of the lot.

- Loading and unloading of materials should be accomplished completely on private property and not from a public street or alley.
- Offensive and hazardous uses should be restricted.
- All new kennels shall be subject to a conditional use permit approval. No new kennels shall be permitted unless deemed to be appropriate at the location proposed and not in conflict with surrounding uses. Approval shall also be made subject to compliance with all conditions established to protect property values in the immediate area and the health, safety, and general welfare of the community.

PROGRAM

- Rezone area to H-B (Home Business) zone.
- Establish street tree planting program.
- Develop program to encourage improvement and upgrade single residential dwellings.

DRAFT ENVIRONMENTAL
IMPACT REPORT FOR
LAND USE ELEMENT
OF THE GENERAL PLAN

Community Development Department
Planning Division
October, 1974

Roy T. Kato, City Planner
Prepared by: Stan Soo Hoo,
Planning Assistant

ENVIRONMENTAL IMPACT REPORT
FOR THE
LAND USE ELEMENT

DESCRIPTION OF PROJECT

This report will assess the environmental impact of the Land Use Element of the General Plan. The project boundaries necessarily include the entire city as well as certain unincorporated areas within the City's sphere of influence. This entire area is designated on Map "B" of the Land Use Element.

The City of Gardena is located in Southern California immediately south of the main portion of the City of Los Angeles, though a section of Los Angeles' strip" to the Los Angeles Harbor abuts the eastern boundary of Gardena. Specifically, the City is bounded to the north by El Segundo Boulevard, to the east by Vermont Avenue, to the south by 182nd Street, and to the west by Crenshaw Boulevard. A regional map is included under the label Map "A" in the Element itself.

The major objective of the proposed Land Use Element is to promote a balanced, inter-related and compatible network of land uses and to address current problems and fulfill future needs. Primary purpose is to provide for quality development. It sets forth community goals and recommends policies and program to attain such goals. The Land Use Element is a guide for long term orderly City development.

Since the document is a technical economic and environmental proposal, a general description of same as called for in the Guidelines for Preparation of Environmental Impact Reports is considered redundant in this case.

DESCRIPTION OF ENVIRONMENTAL SETTING

Gardena is a city of approximately 46,000 -living within a 5.26 square mile area. The City is land-locked, resting on a flood plain, and surrounded by other communities in various stages of development. Mean elevation is 50 feet. The climate is moderate and rainfall averages are slightly higher than the City of Los Angeles. As part of the Los Angeles basin air quality district, Gardena shares similar problems of air pollution with the surrounding area.

The flood plain on which Gardena rests had been originally settled by ranchers and farmers taking advantage of the soil conditions and plentiful water supply. As the South Bay area grew with increased population and industrial centers, land values dictated more intense use of the land.

Gardena's geographic location near the interchange of the San Diego and Harbor Freeways makes commuter access from the Los Angeles metropolitan area easy; it is in this way that Gardena developed into a commuter-oriented community. A relatively significant industrial base was encouraged due to freeway access, as well as proximity of Los Angeles International Airport, Los Angeles Harbor, and various railroad spur lines (see Map "A").

Gardena's agrarian past, reflected in the twenty-five (25) remaining plant nurseries, has largely been replaced by low-rise residential development with supporting areas of strip commercial. In addition, the northeast and southwest areas have attracted significant small and medium industry. Less than 6 percent of the total land area remains vacant. For this reason, demolitions have concentrated on small-residential units to provide for more intensive utilization of the land.¹ Multiple-family rental units have accounted recently for the greatest amount of construction activity, but overall density remains low, at 7.3 people per acre. In terms of population growth, Gardena still maintains a small annual increase (1 to 2 percent annual growth rate). Recent years has seen an ethnic shift in population, the primary cause being a regional dispersion of minorities away from the central Los Angeles area.

The low architectural and topographic profile of Gardena, together with similar development of surrounding communities, makes civic identity difficult. The City tends to blend in as part of the South Bay region with little in the way of a distinctive character.

The major land use is single-family residential, accounting for over 41 percent of the total area. A complete breakdown of land uses and vacant land by percentage and acreage is listed in Table 1.

Designated as a General Law City in September 1930, Gardena operates effectively under the City Council-Administrative Officer form of government. Four City Councilmen, the City Clerk, and the City Treasurer are elected for four-year terms, while the Mayor is elected for a two-year term. As a body, the Council appoints an Administrative Officer who carries out Council policies and is responsible for the efficient operation of all municipal services.

ENVIRONMENTAL IMPACT OF PROPOSED ACTION

The adverse environmental impact of the Land Use Element is minimal. By its very nature, the General Plan, and each element in it, is intended to enhance the environment by providing a direction for future planning efforts in order that these efforts can be concentrated toward the goal of providing the most Environmentally pleasing situation possible in the City.

As stated in the document, "The Land Use Plan does not propose drastic overall changes of the existing land use arrangement..." It is noted, therefore, that the proposals from the plan are concentrated at encouraging quality, future development as well as to upgrade existing conditions with landscaping, improved circulation, additional off-street parking, enhancement of aesthetic features, etc. All proposals are unquestionably an asset to the environment, both in short-term and long-term time frames.

The proposals of this element do call for civic participation. In other words, some amount of economic sacrifice will be required to bring the City up to the standards proposed by the document. However, this would appear to be more desirable than the establishment of lower standards which would be more easily achievable but which would not result in a sense of civic pride.

To summarize, the program called for in the land use document has accounted for the nearly total development of the City and has not attempted to upset the existing situation. It is, instead, aimed at environmentally upgrading what is assumed to be a viable situation.

ADVERSE ENVIRONMENTAL EFFECT WHICH CANNOT BE AVOIDED IF PROPOSAL IS IMPLEMENTED

The sole proposal which would approach having an adverse impact might be the elimination of non-conforming (primarily residential) uses. Any land use which exists in a zone where that use is not permitted is classified as non-conforming. As such, though the City has no active program to abate such uses, their existence is not encouraged. Though this situation is possible in many different variations, the primary problem in Gardena is the existence of residential uses in the commercial and industrial zones. Naturally, the rectification of this situation would result in the displacement of some residents.

It should be mentioned that nonconforming residences are, as a rule, less well maintained than those in an appropriate zone. It might also be said that their location in a commercial or industrial zone is undesirable since the standards by which these activities operate assume that adjoining properties are either similarly zoned or that any residentially zoned properties in the vicinity are properly buffered. Little protection is offered for those in a non-conforming situation since merely by their close proximity to other land uses, they are subjected to their ill effects. Examples of these ill effects include noise, odors, fumes, vibration, increased pedestrian and vehicular traffic, etc.

In essence, therefore, an adverse environmental impact would result from the displacement of residents in a non-conforming situation; however, the mere existence of residential structures in these locations indicates that its occupants are living under adverse environmental conditions presently. Abatement of these non-conforming uses would, therefore, have a long-term beneficial impact.

MITIGATION MEASURES PROPOSED TO MINIMIZE IMPACT

In order to minimize the impact of the rectification of nonconforming residential uses, the Land Use Element states that "Adequate low-cost housing is needed to replace dilapidated units mainly in the areas of mixed housing and industrial uses." Indeed, if sufficient low-cost housing were made available, the displacement of residents would not even amount to an adverse environmental impact since the displacement would be to a necessarily more healthy environment.

Along these same lines, one of the residential objectives included in the land use plan is the fostering of "the development of a variety of housing types and price ranges to meet the requirements and desires of the City's various age, income, and ethnic groups."

ALTERNATIVES TO THE PROPOSED ACTION

The Land Use Element of the General Plan is required by the State of California and no known alternatives exist to its adoption. The alternative of "no project" similarly does not exist.

Since the document is actually intended to enhance the environment, it might even be reasoned that not providing such document would result in an adverse environmental impact.

THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The cumulative and long-term effects of this plan are unequivocally beneficial. As previously mentioned, no radical changes have been assumed in existing land use and only the enhancement of the present situation is sought. The project is thought to be justified now rather than reserving an option for further alternatives since (a) all proposals are environmentally beneficial and should be enacted as soon as possible; and (b) as alternatives arise, amendments can be made at any time to the Element.

IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

No irreversible environmental changes are involved in the proposal. The total environmental impact will be one of a direction for the orderly development of the City of Gardena. Policies included to meet this end call only for programs to achieve goals which are indisputably desirable environmentally. None of the policies suggested are irreversible since the document may be amended at any time should this be desired.

GROWTH INDUCING IMPACT OF PROPOSED ACTION

Residential growth should not be significantly altered by the Plan since it calls for the preservation of the City's low medium density residential character as well as the protection of single-family residential areas. Also mentioned is the recommendation to avoid overburdening of utilities, streets, and community services. Limited high density developments are allowed for under special circumstances and will be of very high quality. In any case, these high density developments will not be numerous enough to be considered as a significant growth inducer.

Economic growth will hopefully be fostered by the implementation of the Land Use Plan. With the proposed revitalization of some commercial and industrial areas to attract quality developments and the general enhancement of the entire City, it is anticipated that this would promote sound and orderly economic growth. It should be emphasized that stress will be put on quality development.

ORGANIZATIONS AND PERSONS CONSULTED

This Environmental Impact Report was prepared solely by the City of Gardena.

WATER QUALITY ASPECTS

The document has no significant known effect on water quality.

DEPARTMENTAL COMMENTS

(To be attached to the
Draft EIR for Land Use Element)

City of Gardena
Department of Recreation and Parks

1651 W. 162nd STREET • GARDENA, CALIFORNIA 90247 • 213-(327-0220) EXT. 240 OR 243



AL NASH
DIRECTOR

MEMO TO: Planning Division
FROM: Al Nash, Director of Recreation and Parks
DATE: October 31, 1974
SUBJECT: Draft EIR-Land Use Element of General Plan

I have reviewed the subject draft report and am in agreement with the proposal. I have no further comments except to commend Planning Division staff on a commendable job.

Al Nash
Al Nash, Director

AN/lg

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DEVELOPMENT SERVICES
DEPARTMENT

NOV 1 1974

BUILDING PL NG

MEMO TO: Roy Kato, City Planner
FROM: Russell H. Maguire, Assistant City Engineer
DATE: 10/30/74
SUBJECT: EIR for Land Use Element of General Plan

We have reviewed the subject EIR and have the following comments:

1. All adverse environmental impacts should be listed, then considered as minimal or corrected by mitigating measures.
2. The environmental impact of "Down-Zoning" should specifically be considered in view of present court cases. This is particularly critical in relation to any expansion of the Civic Center to Western Ave.
3. The environmental impact of "Up-Zoning" should specifically be considered for its affect on other facilities such as streets, sewer, water, etc.
4. Other alternate plans should not be ruled out, as land use elements consistent with either present land use or zoning are viable alternates with probably less impact.
5. Irreversible environmental changes cannot be avoided and should not be discarded with a "NO" statement. In view of present and probable future court actions and laws, "Down-Zoning", "Up-Zoning" and "Displacement of People" are irreversible without mitigating measures.



Russell H. Maguire
Assistant City Engineer

RHM/yt

Attachment

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DEVELOPMENT SERVICES
DEPARTMENT

OCT 30 1974

BUILDING PL NG

MEMORANDUM

**OFFICE OF THE POLICE DEPARTMENT
GARDENA, CALIFORNIA**

FROM: William D. Hudgeons, Chief of Police

DATE: 10-30-74

TO: Stan Soo Hoo, Planning Assistant

cc:

SUBJ: Draft EIR for Land Use Element of General Plan

I have recently completed my review of the preliminary land use element submitted to this department on October 21, 1974.

I concur with the goals of this project and wholeheartedly agree that specific guidelines are necessary for orderly city development.

In Part IV, Section D, of the Land Use Plan, I note the Community Development Department feels that should multi-unit construction continue to outpace single-family units, the character of Gardena will be threatened and municipal service systems will be unable to handle increased demands. Noting on Table 5 that 12 homes and 647 multiple family residences were built from 1970 to 1973, I feel obligated to point out that in addition to increased population, density of future population will have a significant adverse effect on the crime rate in Gardena.

Respectfully,

William Hudgeons

Chief of Police

WDH/cf/ma

R E C E I V E D
DEVELOPMENT SERVICES
DEPARTMENT

OCT 31 1974

BUILDING PL NG

TO: Stan Soo Hoo
FROM: Fire Department
DATE: 10-25-74
SUBJ: Comments on Land Use Element of General Plan

The Fire Department is in agreement with the proposed Land Use Element of the General Plan and especially in that it encourages the reversal of the present trend toward higher density dwellings.

If the reversal does not come about, the Fire Department will probably have to spend more money for the increased fire protection necessary for densely populated areas. In addition, high density could possibly require more "built-in" fire protection in the structures in the form of fire-resistant construction, automatic fire sprinklers and water supply.

The Land Use Element report appears to be quite comprehensive, thorough and well done.

JAMES M. GOULD
Fire Chief

by A. Lero, Fire Marshal

AL/cjp
cc Harvey Napuck
Fire Marshal
Chrono

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DEVELOPMENT SERVICES
DEPARTMENT

OCT 29 1974

BUILDING PL NG



CITY of GARDENA

EDMOND J. RUSS, *Mayor*
WILLIAM L. (BILL) COX, *Mayor Pro Tem*
MAS FUKAI, *Councilman*
DONALD T. HATA JR., *Councilman*
CHARLES A. (CHUCK) NADER, *Councilman*

DEVELOPMENT SERVICES DEPARTMENT / Walter Bobotek / *Director*
1700 WEST 162nd STREET, GARDENA, CALIFORNIA 90247, (213) 327-0220

DORIS F. DIAMOND, *City Clerk*
SIDNEY LEMBERGER, *City Treasurer*
CRAIG A. McDOWELL, *Administrative Officer*
WALTER N. ANDERSON, *City Attorney*

MEMO TO: Planning Division
FROM: Ralph C. Grippo
Building & Safety Superintendent
DATE: October 31, 1974
SUBJECT: Comments -- E.I.R. for Land Use Element

Down zoning of multi-family residential to single-family use can be a short-term economic adverse effect on the property owner. This rezoning would be required to make the zoning in conformance to the land use element of the general plan. The property owner may want to file an inverse condemnation suit against the City with the possibility of liability and damages being paid in court actions. What percentage of the land would be affected by down zoning?

The land use element shows park sites in a general area location. The open space element along with this element can be shown to lock-up a general area for "park" use. This can also be construed to be inverse condemnation by the property owner. A depreciated land value can result if it is known the City needs to buy land in the area for a park. This could be a short-range economic hardship to the property owner.

I recommend that a Negative Declaration be filed for this report as no long-range significant impact will take place.

Ralph C. Grippo
Ralph C. Grippo
Building & Safety Supt.

RCG/km

RESPONSE

1. Both the State and City Guidelines for Implementation of the California Environmental Quality Act of 1970 specify that extensive detail not needed for evaluation of environmental impact not be included in the EIR. The entire environmental review process is intended to amplify significant adverse environmental issues since there are limitless insignificant impacts involved in any project. Of course, significance is a subjective term and certain impacts may be considered insignificant to some and significant to others. Recognizing this, the environmental evaluation procedures call for review of the Draft EIR by related departments during which impacts not mentioned in the report might be uncovered. Further review is conducted by the Planning Commission where a public hearing is held to solicit the input of the public. It is believed that all significant impact is recognized by the time the Draft EIR is certified by the City Council.
2. The impact of "down-zoning" has already been discussed in staff's response to the Building and Safety Superintendent's comments.

The proposed establishment of a "Civic Center Development Area" as called for in the Program Section and designated on the map labeled "Land Use Plan," could indeed have an environmental impact if implemented since there are over twenty (20) residential properties within the area with a number of commercial properties also in the area. The impact of the results of such a proposal is difficult to gauge since the proposal does not contain specific plans for expansion. However, before expansion is physically begun, an environmental evaluation will be done.

The proposed expansion will force the displacement of residents in the area as well as commercial tenants on Western Avenue. The impact of residential displacement has already been discussed; however, in this case, non-conforming uses are not involved since existing residential structures are in the R-2 Zone. Should housing be provided in accordance with the Housing Element of the General Plan,, residents currently living in this area will have alternate housing available. The dislocation of residents cannot be avoided if the proposal is implemented.

The impact to commercial properties is similarly of displacement. The quality of the commercial structures in this area is less than optimal and it is the intent of this proposal to upgrade and revitalize this area. No mitigation measures are offered in the proposal.

The "inverse condemnation effect" of announcing the City's intentions cannot be avoided. All areas within the Civic Center environment has been included in the "Civic Center Development Area." The plan merely shows what areas should logically be considered for Civic Center expansion. The only alternative to identifying such an area is, of course, not doing so. This is considered undesirable since any future expansion would be done randomly and with no direction. The alternative of modifying the boundaries of this area is perhaps feasible; however, the present proposal is intended to include all areas in the Civic Center environment.

3. No "up-zoning" proposals have been made.
4. The Land Use Element is, with few exceptions, consistent with present land use and zoning. A plan which is more liberal less restrictive, would not be appropriate since a viable land use pattern has already been established and accepted. Similarly, the maintaining of residential density at its current level rather than allowing it to expand to its ultimate is intended to prevent a burden on City services and facilities as well as traffic congestion, etc., which would occur should a less restrictive plan be adopted.

A more restrictive plan would have a drastic impact since land uses are currently in general conformance with the present Zoning Code. Since the City is almost totally Developed, a more restrictive policy would put most land uses in the City in a confusing status. This alternative should only be pursued if the present situation were not basically viable. In this case, as stated in the Element, the present situation is considered workable with a number of environmentally enhancing modifications, which would not affect the basic land use pattern.

5. Down-zoning and up-zoning are not considered irreversible in that, upon reconsideration, the zoning may always be reverted to the original state or to the other extreme. Displacement of people, of course, is irreversible; however, its impact has already been discussed in the Draft EIR. Mitigation measures have also been covered in the draft. It must be remembered that this irreversible change will enhance the environment by rectifying non-conforming situations.

RESPONSE

1. Though the proposals in the Element do not call for "down zoning" per se, that is, a reduction of permitted density by reclassification to a less intense zone, it does imply that provisions of certain multiple-family zones will be altered to, in fact, reduce density. The crucial difference is that no lowering of land use classification is proposed. It is staff's understanding that the courts consider the re-zoning of land for a "lower" land use as possible inverse condemnation. It is also understood that revisions to the provisions of certain zones, even if these revisions lead to the lowering of density is not considered inverse condemnation since such changes are considered necessary to adjust to the ever-changing urban situation.

Nevertheless, such a proposal could be a short-term adverse impact to some property owners. Those owning property in zones affected by such amendments could suffer economic loss since a fewer number of dwelling units could potentially be constructed on the property. The overall impact of the proposal would be to maintain density at approximately its current level. The impact to property owners cannot be mitigated since the very impact results in the desired objective. The objective in this case is the restriction of density potential in certain zones thus benefiting the City as a whole, but which requires a certain amount of sacrifice from certain individual property owners.

2. It is true that certain areas have been designated as having inadequate facilities for recreation. Unfortunately, according to accepted standards, these areas are deficient and rectification of the situation is dependent first on recognition of the problem. In this case, the mere identification of areas in need of additional parks has the tendency to affect private properties since the park has the potential to be placed anywhere within a given area thereby rendering properties in that area questionable for future private use.

In this case, the impact will be caused by the City's acknowledgement that certain areas are lacking in parks. No mitigation measures are possible since the impact is caused by identification of a problem. A greater impact is foreseen by ignoring this problem, making it unlikely that adequate recreational facilities will be provided in these areas. While a short-term adverse impact can be foreseen to property owners, a long-term beneficial impact is predicted for the proposal.



EDMOND J. RUSS, *Mayor*
WILLIAM L. (BILL) COX, *Mayor Pro Tem*
MAS FUKAI, *Councilman*
DONALD T. HATA JR., *Councilman*
CHARLES A. (CHUCK) NADER, *Councilman*

CITY of GARDENA

RECREATION AND PARKS DEPARTMENT / Al Nash / Director
1700 WEST 162nd STREET / GARDENA, CALIFORNIA 90247 / (213) 327-0220

DORIS F. DIAMOND, *City Clerk*
SIDNEY LEMBERGER, *City Treasurer*
CRAIG A. McDOWELL, *Administrative Officer*
WALTER N. ANDERSON, *City Attorney*

MEMO TO: Planning Division
FROM: Al Nash, Director of Recreation and Parks
DATE: November 7, 1974
SUBJECT: Land Use Element--General Plan

The subject land use element has been reviewed. I am in concurrence with the report. I have no further comments except to commend the Planning Division staff on a job well done.

Al Nash
Al Nash, Director

/lg

RECEIVED
DEVELOPMENT SERVICES
DEPARTMENT

NOV 7 1974

BUILDING P NG



CITY OF GARDENA

HOUSING ELEMENT

PREPARED BY

COMMUNITY DEVELOPMENT DEPARTMENT
PLANNING DIVISION

STAFF

KATHY IKARI

JACK MESSERLIAN

ADOPTED

AUGUST 1992

RESOLUTION NO. 4164

DONALD L. DEAR, MAYOR

GWEN DUFFY, MAYOR PRO TEM

MAS FUKAI, COUNCILMEMBER

JAMES W. CRAGIN, COUNCIL MEMBER

PAUL Y. TSUKAHARA, COUNCIL MEMBER

MAY Y. DOI, CITY CLERK

LORENZO YBARRA, CITY TREASURER

KENNETH W. LANDAU, CITY MANAGER

PLANNING & ENVIRONMENTAL QUALITY COMMISSION

ARTHUR JOHNSON, CHAIRMAN

RYO KOMAE, VICE CHAIRMAN

BRUCE DUTTON, COMMISSIONER

DUANE HINDS, COMMISSIONER

ROGER UCHIDA, COMMISSIONER

KATHY IKARI, COMMUNITY DEVELOPMENT DIRECTOR

JACK MESSERLIAN, PLANNING ADMINISTRATOR

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INTRODUCTION

The Housing Element of the City of Gardena is intended to provide citizens and public officials with an understanding of the housing needs of the community, and to set forth an integrated set of policies and programs aimed at attaining defined goals. It expresses the City's strategy in all matters relating to housing and provides guidance and direction to local decision-makers.

Pursuant to the State Government Code, Housing Elements must include all of the following:

- a) An assessment of the housing needs and an inventory of resources and constraints relevant to meeting these needs. The assessment and inventory shall include the following:
 - 1) Analysis of population and employment trends and documentation of projections and a qualification of the locality's existing and projected housing needs for all income levels.
 - 2) Analysis and documentation of household characteristics, housing characteristics, overcrowding, housing stock conditions.
 - 3) An inventory of land, suitable for residential development and an analysis of the relationship of zoning and public facilities and services to these sites.
 - 4) Analysis of potential and actual government constraints such as land use controls, building codes, site improvements, fees and processing and permit procedures.
 - 5) Analysis of potential and actual nongovernmental constraints such as the availability of financing, the price of land, and the cost of construction.
 - 6) Analysis of any special housing needs, such as those of the handicapped, elderly, large families, farm workers, families with female heads of households, and families and persons in need of emergency shelter.
 - 7) Analysis of opportunities for energy conservation with respect to residential development.
 - 8) An analysis of existing assisted housing developments that are eligible to change to non-low-income housing uses during the next 10 years due to termination of subsidy contracts, mortgage prepayment, or expiration of use restrictions.
- b) A statement of the community's goals, quantified objectives, and policies relative to the maintenance, improvement and development of housing.
- c) A program which sets forth a five-year schedule of actions the local government is undertaking or intends to undertake to implement the policies and achieve the goals and objectives of the housing element through the administration of land use and development controls, provision of regulatory concessions and incentives, and the utilization of appropriate federal and state financing and subsidy programs when available.

DEMOGRAPHIC PROFILE

POPULATION TRENDS

The City experienced its greatest growth during the period of 1940 through 1960 when annual population increase averaged 9.5 percent. Beginning in the 1960s slower growth has resulted in more moderate annual increases of about one percent. The 14% increase in population in the last 10 year period includes 10% natural growth and 4% resulting from the annexation of the "Rosecrans Corridor" unincorporated area in September of 1990.

CITY OF GARDENA TABLE 1 POPULATION GROWTH, 1940-1990		
YEAR	POPULATION	RATE OF GROWTH
1940	5,909	----
1950	14,405	144%
1960	35,943	150%
1970	41,090	14%
1980	45,165	9%
1990	51,487	14%

SOURCE: U.S. Census 1940-1990

AGE COMPOSITION

One of the more noticeable shifts in the demographic make-up of the community has been in the area of age composition, where since 1970 there has been a decrease in pre-school and school age population, and an increase in the over 60 year old group. Declining birth rates and the annexation of several trailer parks in the northeastern part of the City in 1969 that house a large number of older residents appear to have impacted the City's age profile. Based on preliminary 1990 U.S. Census information, the 18+ age category comprises 76.89% of the City's population.

CITY OF GARDENA						
TABLE 2						
AGE DISTRIBUTION, 1970-1990						
AGE COHORT	1970	%	1980	%	1990	%
0-4 years Pre-school	3,242	7.9	3,199	7.0	4,012	7.8
5-18 years School	10,107	24.7	8,762	19.3	8,573	16.7
19-60 years Production	22,854	55.7	27,042	59.8	30,897	60.0
60+ years Senior	4,818	11.7	6,162	13.6	8,005	15.5
TOTAL	41,021	100.0	45,165	100.0	51,487	100.0
SOURCE: U.S. Census 1970-1990						

HOUSEHOLD

Since the City's historic population growth period of 1940 to 1960 when the number of households grew rapidly, the rate of growth has been 9.7% over the last decade. For the five year planning period, 1989 to 1994, the Southern California Association of Governments (SCAG) does not forecast a significant change in the growth rate.

CITY OF GARDENA			
TABLE 3			
HOUSEHOLDS, 1970-1990			
YEAR	NO. OF HOUSEHOLDS	RATE OF GROWTH	HOUSEHOLD SIZE
1970	14,207	-----	2.86
1980	17,025	20.0%	2.65
1990	18,681	9.7%	2.76
SOURCE: U.S. CENSUS 1970-1990			

The average number of persons living in households in the City has declined from a high of 3.27 in 1960 to 2.76. Analysis of household size seems to indicate a relationship between household size and the decreasing percentage of persons under 18 years of age. The trend toward smaller household size is attributable to the growing number of single person households, childless couples, children who have grown and left home, and a low birth rate.

ETHNICITY

There has been a significant diversification in the City's ethnic composition since 1970 making Gardena among the more ethnically balanced cities in the County. Persons of Spanish origin are deducted from each race category and shown in the "Hispanic" category.

RACE	1970		1980		1990	
	NUMBER	%	NUMBER	%	NUMBER	%
White	23,255	56.7%	14,169	31.4%	11,260	21.87%
Black	1,475	3.6%	10,156	22.5%	11,523	22.38%
Hispanic	6,310	15.4%	7,736	17.1%	11,843	23.00%
Asian	9,480	23.1%	12,510	27.7%	16,514	32.19%

SOURCE: U.S. Census 1970-1990

INCOME

Both household and family median incomes in Gardena have kept pace with state and County medians.

AREA	MEDIAN HOUSEHOLD INCOME		MEDIAN FAMILY INCOME	
	1980	1990	1980	1990
Gardena	\$18,399	\$33,063	\$21,882	\$37,096
L.A. County	\$18,121	\$34,965	\$20,802	\$39,035
California	\$18,243	\$35,798	\$21,169	\$40,559

SOURCE: U.S. Census 1980, 1990

While most households consist of families, a sizeable minority consist of only one person or unrelated persons living together. Estimates of median household income in Gardena show a significant increase of 79% during the last decade. Whereas households in the \$35,000+ income category comprised only 14.3% of all households in 1980, this percentage has more than tripled to 47.2% in 1990.

CITY OF GARDENA TABLE 6 HOUSEHOLD INCOME				
HOUSEHOLDS BY INCOME	1980 CENSUS		1990 CENSUS	
	17,025	%	18,078	%
Less than \$5,000	1,765	10.4	637	3.5
\$ 5,000 - \$ 9,999	2,321	13.6	1,254	6.9
\$ 10,000 - \$14,999	2,440	14.3	1,172	6.5
\$ 15,000 - \$19,999	2,703	15.9	1,539	8.5
\$ 20,000 - \$24,999	2,354	13.8	1,619	9.0
\$ 25,000 - \$29,999	1,671	9.8	1,674	9.3
\$ 30,000 - \$34,999	1,340	7.9	1,650	9.1
\$ 35,000 - \$39,999	798	4.7	1,250	6.9
\$ 40,000 - \$49,999	982	5.8	2,279	12.6
\$ 50,000 - \$74,999	527	3.1	3,375	18.7
\$ 75,000 +	124	0.7	1,629	9.0
Median Household Income	\$18,476	100.0	\$33,063	100.0
Source: U.S. Census 1980,1990				

Family households have higher incomes than other households. During the last decade, the median family income in Gardena increased by 69%. Similarly, the \$35,000+ income category increased from 19.2% of all families in 1980 to 53.7% in 1990.

CITY OF GARDENA TABLE 7 FAMILY INCOME				
FAMILIES BY INCOME	1980 CENSUS		1990 CENSUS	
	11,599	%	12,422	%
Less Than \$5,000	591	5.1	316	2.5
\$ 5,000 - \$ 9,999	1,199	10.3	571	4.6
\$ 10,000 - \$14,999	1,385	11.9	696	5.6
\$ 15,000 - \$19,999	1,839	15.9	984	7.9
\$ 20,000 - \$24,999	1,759	15.1	985	7.9
\$ 25,000 - \$29,999	1,401	12.1	1,066	8.6
\$ 30,000 - \$34,999	1,193	10.3	1,131	9.1
\$ 35,000 - \$39,999	722	6.2	871	7.0
\$ 40,000 - \$49,999	894	7.7	1,704	13.7
\$ 50,000 - \$74,999	498	4.3	2,757	22.2
\$ 75,000 +	118	1.0	1,341	10.8
Median Family Income	\$21,948	100.0	\$37,096	100.0
SOURCE: U.S. Census 1980, 1990				

EMPLOYMENT

According to the 1990 U.S. Census, 55% of the City's population is in the civilian labor force (18-64 years of age). The unemployment rate for the City in 1990 was 5.9%. A breakdown of the 1990 labor force identifies 22% in professional, administrative and managerial occupations; 27.4% in manufacturing assembly, crafts, and repair; 37.5% in sales, technical, clerical; 12% in service; and 1.1 % in farming.

CITY OF GARDENA TABLE 8 LABOR FORCE, 1990						
AREA	POP	LABOR FORCE	% OF POP	CIVIL EMP.	UNEMP.	UNEMP RATE
Gardena	51,487	28,169	55	26,451	1,656	5.9
L.A. County	8,863,164	4,557,390	51.42	4,203,792	334,572	7.96

SOURCE: U.S. Census 1990
SCAG Regional Economic Profile

JOBS/HOUSING BALANCE

Jobs/housing balance is the relationship of employment to housing units within a given geographic area. A community is considered "balanced" when these distributions are approximately equal. The purpose of jobs/housing balance policy is to facilitate workers living close to their jobs, thus reducing traffic congestion and air pollution problems.

Table 9 illustrates the City's jobs/housing balance ratio which was 1.70% in 1987 and is projected to be 1.51 % in 2010. In both instances the City is found to be job rich, however, by 2010 housing supply will grow faster than job formation, thereby bringing the City closer to the desired ratio and making it a jobs/housing balanced community.

CITY OF GARDENA TABLE 9 JOBS/HOUSING				
	1987	2010	Growth 1987-2010	% of Growth 1987-2010
Jobs	31,526	34,860	3,334	10.58
Housing	18,576	23,026	4,450	23.96
Ratio	1.70	1.51	0.75	

SOURCE: SCAG 1987 Growth Forecast
SCAG 1989 Air Quality Plan Conformity Guidelines

HOUSING CHARACTERISTICS

HOUSING SUPPLY AND TYPE

The composition of Gardena's housing stock has evolved during the past three decades from predominantly a suburban setting of single family dwellings to a setting of apartments, condominiums, as well as single-family dwellings. While the City has experienced continuous growth in housing construction during this time, the greatest growth occurred during the period 1950 to 1960 when the housing stock more than doubled.

CITY OF GARDENA
TABLE 10
HOUSING GROWTH, 1940-1990

YEAR	NUMBER	CHANGE
1940	808	---
1950	4,570	465%
1960	11,526	152%
1970	14,694	27%
1980	17,540	20%
1990	19,603	12%

SOURCE: U.S. Census 1940-1990
Gardena Building & Safety Division

While the City experienced a net loss of 361 single family dwellings since 1980, 507 additional single family dwellings were added to the City's housing stock through the annexation of the "Rosecrans Corridor" area.

CITY OF GARDENA TABLE 11 HOUSING INVENTORY				
	1980		1990 *	
	NO.	%	NO.	%
1 Detached	7,986	45.5	9,012	44.03
1 Attached	502	2.9	1,033	5.04
2 Units	469	2.7	579	2.82
3 or 4 Units	1,572	9.0	1,977	9.66
5 or More Units	5,891	33.6	6,445	31.49
Mobilehomes	1,120	6.4	1,168	5.70
Other	--	---	250	1.22
TOTAL	17,540	100.0	20,464	100.0
SOURCE:	U.S. Census 1980-1990			

* Includes West Gardena data

RESIDENTIAL CONSTRUCTION TRENDS

Residential construction activity since 1980 points to a trend of demolition of single family dwellings and replacement by multiple family dwelling. Since 1980, 80% of all units demolished have been single family dwellings and 96% of all units constructed have been multiple family dwellings (2-4 units, 5+ units, and condominiums).

CITY OF GARDENA TABLE 12 RESIDENTIAL CONSTRUCTION 4/01/80 - 4/01/90										
YEAR	SINGLE FAMILY		2 - UNITS		5+ UNITS		TOTAL		GAINED	LOST
	GAINED	LOST	GAINED	LOST	GAINED	LOST	GAINED	LOST		
1980	3	34	21	10	182	---	206	44		
1981	1	42	28	10	121	---	152	40		
1982	2	31	6	4	107	---	115	35		
1983	2	14	29	14	155	---	185	56		
1984	3	30	15	10	75	---	92	24		
1985	3	37	53	4	193	---	249	41		
1986	2	55	54	12	249	---	305	167		
1987	27	56	69	8	104	---	200	64		
1988	13	80	83	8	195	---	291	88		
1989	28	57	119	16	163	13	310	86		
1990	3	11	32	2	28	---	63	13		
TOTAL	87	558	509	98	1,572	13	2,168	558		
% OF TOTAL	4.0	80.0	23.5	17.5	72.5	2.3	100.0	100.0		
SOURCE:	City of Gardena, Building & Safety Division Records									

HOUSING AGE AND CONDITION

A review of structural conditions throughout the City revealed that the great majority of residential structures are well-maintained and in good condition. Results of the 1988 land use survey indicated a majority (780/o) of the structures may need some minor repair or painting but are otherwise in good repair. Twenty per cent (20%) of the City's housing stock is in excellent condition, while two percent (2%) is in poor condition. Buildings in the latter category would need substantial repair or should be demolished and replaced. The result of the survey are as follows:

CITY OF GARDENA TABLE 13 HOUSING CONDITION		
HOUSING TYPE	CONDITION RATING	NO. UNITS
Single-Family, Detached	1	671
Single-Family, Detached	2	5,644
Single Family, Detached	3	124
Two-Family (Duplex)	1	14
Two-Family (Duplex)	2	1,216
Two-Family (Duplex)	3	28
Multi-Family (3+ Units Per Structure)	1	2,771
Muti-Family (3+ Units Per Structure)	2	6,223
Multi-Family (3+ Units Per Structure)	3	47

Condition Ratings are defined as follows:

- 1 = Good to excellent, or new
- 2 = Average, may need some minor repair or painting, etc.
- 3 = Poor, need substantial repair or incompatible with surrounding commercial or industrial uses

SOURCE: Wildan Associates Land Use Survey, 1988

Many of Gardena's single-family residential neighborhoods are in good condition. While 72 percent of the dwellings were constructed over 20 years ago, the great majority have been well maintained. Due to limited evidence of deterioration in these neighborhoods, intensive rehabilitation efforts will likely not be required in the near future. Instead, the enforcement of building and zoning codes will probably be sufficient to ensure adequate maintenance.

There are several concentrations of poorly maintained parcels, scattered throughout the City, which give the entire surrounding area a negative appearance. The causes of deterioration within these areas are mainly due to the relative age and quality of the original construction, the construction material used and the lack of maintenance.

The age of residential dwellings in the City as of 1990 is illustrated below:

CITY OF GARDENA
TABLE 14
HOUSING AGE

YEAR BUILT	NO. OF UNITS	PERCENT
1989 - 3/90	435	2.29
1985 - 1988	1,297	6.81
1980 - 1984	1,114	5.85
1970 - 1979	2,420	12.71
1960 - 1969	3,771	19.81
1950 - 1959	6,987	36.70
1940 - 1949	2,439	12.81
1939 or earlier	574	3.02

SOURCE: U.S. Census 1990 Median Year 1959

Since 1980, 558 dwelling units have been demolished, 80% of which were single family. In the same period 2,168 new units were constructed, 96% of which were apartments and condominiums. The majority of the demolished single family units were units located on parcels zoned for multi-family dwellings. In September 1990, the City annexed an unincorporated area of Los Angeles County adding to its housing stock 566 units, the majority of which were constructed in the mid 1960's. The vast majority of these units are in good to excellent condition.

HOUSING COSTS AND AFFORDABILITY

Affordable housing, as defined by HUD, does not require the allocation of more than 25% of a household's income for shelter. While many households spend more than 25% of their incomes for mortgage or rent payments, those with low and moderate incomes tend to pay a larger proportion of household income pay for housing.

The cost of housing in California, and especially in Southern California, has continued to increase by almost 350%, while income has only increased by 247%. Both housing values and rents have increased faster than incomes, so that affordability has become the state's most widespread housing problem.

Since 1970, median home values in Gardena have increased approximately 684% and rents have increased 255%, compared to a 175% increase in household income.

The relationship between household income and the percentage of income spent on housing in the City is illustrated below.

CITY OF GARDENA TABLE 15 HOUSING COSTS AND HOUSEHOLD INCOME, 1990			
	MEDIAN HOUSING VALUE	MEDIAN MONTHLY RENT	MEDIAN HOUSEHOLD INCOME
Gardena	\$202,200	646	\$33,063
LA County	\$226,400	570	N/A
California	\$175,000	565	\$35,798

SOURCE: U.S. Census 1990
1990 Statewide Housing Plan Update

CITY OF GARDENA TABLE 16 PERCENTAGE OF INCOME SPENT FOR HOUSING AND TENURE, 1990					
ANNUAL HOUSEHOLD INCOME					
% of Household Income Spent	Less Than \$10,000	\$10,000 - \$19,999	\$20,000 - \$34,999	\$35,000 - \$49,999	\$50,000 or More
Owner Households					
0% - 19%	52	346	643	565	2,012
20% - 24%	46	42	72	114	357
25% - 29%	28	67	94	162	257
30% - 34%	17	12	24	127	150
35+%	152	160	383	262	246
Not Computed	76	0	0	0	0
Renter Households					
0% - 19%	0	11	343	785	1,196
20% - 24%	23	61	646	489	162
25% - 29%	62	53	917	250	52
30% - 34%	24	189	616	183	0
35+%	950	1,408	808	78	0
Not Computed	196	39	64	0	11

SOURCE: U.S. Census 1990

VACANCY AND TENURE

The vacancy rate within Gardena indicates the existing relationship between housing supply and demand. Low vacancy rates most adversely affect low income households, young persons forming new households and senior citizens on fixed incomes. Most experts consider a 5% vacancy rate necessary for the proper functioning of the housing market. According to the 1990 U.S. Census, the vacancy rate in Gardena is 4.7%.

The ratio of owner occupied to renter-occupied units in Gardena has been shifting since 1970 when the mix was 55.7% owner-occupied and 44.3% renter occupied. Today, it is estimated that renter occupied housing at 56.2% has surpassed owner occupied housing. Factors contributing to this shift include construction of predominantly multiple-family units in the City (96% of new residential units), formation of new households by single persons, home values pricing otherwise qualified home buyers out of the market, replacement of single family housing stock or multiple family zoned lots by multiple family units.

OVERCROWDING

Overcrowding is a condition related both to the size of units and the number of persons per household. Any dwelling which has more than 1.0 persons per room is considered overcrowded and any dwelling with more than 1.5 persons per room is severely overcrowded. Bathrooms, porches, hallways, balconies, foyers, and half rooms are not counted in determining the ratio of persons to rooms. U.S. Census data for 1990 show that 1,915 households live in overcrowded condition (10.25% of all occupied units).

POTENTIAL RESIDENTIAL DEVELOPMENT

LAND SUITABLE FOR RESIDENTIAL DEVELOPMENT

A major impediment for further development of housing in Gardena is the limited supply of vacant or underutilized parcels suitable for residential zoning and/or development. Residential construction trends over the past decade indicate that new housing construction in the City is taking place on parcels already zoned for higher density but which may be underutilized.

The conversion of some of the City's remaining plant nurseries and a drive-in theatre offer the only viable opportunities of sizeable residential development.

CITY OF GARDENA
TABLE 17
LAND SUITABLE FOR RESIDENTIAL DEVELOPMENT

	ACREAGE	ZONE	GENERAL PLAN DESIGNATION	POTENTIAL # UNITS	
1.	0.31	R-1	Low Density Residential	2	R-1
2.	2.91	R-2	Medium Density Residential	50	R-2
3.	2.62	R-3+R-1	Medium & Low Density Residential	71	R-3
4.	4.70	R-3+R-1	Neighborhood Commercial Medium & Low Density Residential	128	R-3
5.	1.33	R-3+R-1	Medium & Low Density Residential	36	R-3
6.	0.88	R-1	Low Density Residential	24	R-3
7.	2.63	R-3+R-1	Medium & Low Density Residential	71	R-3
8.	0.38	R-3	Medium Density Residential	10	R-3
9.	0.63	C-P	High Density Residential	17	R-3
10.	0.50	C-P	Highway Commercial	13	R-3
11.	21.59	C-4	Highway Commercial	588	R-3
TOTAL					1,010
SOURCE: City of Gardena, Planning Division Records					

The actions necessary to implement the conversion of land for high density residential use will be controversial in view of current strong feelings about the negative impact higher densities will have on services and quality of life.

SECOND UNITS

The City has had an ordinance since 1980 to allow second units - granny units - for seniors 60 years and older on single family zoned lots. This ordinance's future effect on the supply of housing is expected to be minimal inasmuch as during the past 10 years, the City has approved all 14 requests for "granny units". This may be due to the fact that most R-1 zoned lots in the City are minimum size with small rear yard requirements rendering second units less feasible than residential expansion.

MANUFACTURED HOUSING

Manufactured housing on permanent foundations is currently permitted in all single-family zoned lots so long as the unit meets federal and local standards specified in Government Code Section 65852.3. Gardena's development standards for manufactured homes do not exceed those required for a conventional home on the same lot.

HOUSING NEED

Under California Housing Law, Existing and Future Housing Need is determined every five years by the Southern California Association of Governments (SCAG). The 1988 "Regional Housing Needs Assessment for Southern California" (RHNA) identifies Gardena's Existing Housing Need as of January 1, 1988 and Future Housing Need to July 1, 1994.

CURRENT HOUSING NEEDS

The Regional Housing Needs Assessment identifies Existing Need in each jurisdiction based on the level of "overpayment" for shelter by lower income households. Overpayment is defined as rent or house payments that exceed 30% of household income. Lower income households are those households within each jurisdiction that have incomes of less than 80% of the County's median household income.

Not every household that pays a disproportionately high amount of their income toward rent or house payment is considered in need of housing assistance. A household is defined as in need of assistance only meets the following income and payment criteria:

1. Has an annual income of 80% or less of the median income for the standard metropolitan statistical area (usually, the County), and
2. Pays a large share of that income (currently defined as greater than 30%) toward a house payment or rent.

The lower income category identified in the RHNA includes the very low income (less than 50% of median) and low income (50-80% of median) categories. The households within these two categories that pay more than 30% of their income toward shelter are households that have an "existing" need for assistance.

CITY OF GARDENA TABLE 18 LOW INCOME HOUSEHOLDS PAYING OVER 30%		
TYPE OF HOUSEHOLD	VERY LOW INCOME 0-50% OF COUNTY MEDIAN	LOW INCOME 50-80% OF COUNTY MEDIAN
Owners	286	182
Renters	1,772	970
	2,058	

SOURCE: SCAG 1988 RHNA

SPECIAL NEEDS

The elderly, the handicapped, families with female heads-of-households, large families and the homeless commonly face the most difficulty obtaining adequate and affordable housing.

An estimated 2,277 households presently residing in the City need housing assistance. Approximately 85% of these households are renters and 15% owners. Families comprise 65% of the renter households and 50% of the owner households. Overall, nearly 50% of the total need in the City comes from small families of 4 or less persons.

ELDERLY HOUSEHOLDS

Elderly persons, 65 years and older, comprise approximately 13% of the City's population, and an estimated 20% of all households are headed by elderly persons. Of the households headed by elderly, 65% live in owner-occupied dwellings and 35% in rental units. Of the elderly who need housing assistance, however, 80% live in rental units and only 20% live in owner-occupied dwellings. The housing needs of this group can be addressed through the provision of smaller units, second units, shared living arrangements, congregate housing and housing assistance programs.

HANDICAPPED HOUSEHOLDS

Approximately 9% of the City's households have at least one member with some form of disabling handicap. Though the handicaps are diverse and some may not need special housing accommodations, overall, special housing needs such as ramps, handrails, ground floor access, etc. are very necessary and must be designed to address each person's need on an individual basis. Households that have both elderly and handicapped persons are even more impacted by rising housing costs, therefore, their needs deserve special attention especially in design features such as widened doorways, ramps, lowered counter tops, ground floor units, etc.

FEMALE HEADED HOUSEHOLDS

It is estimated that 40% of all households in the City needing housing assistance are headed by females whose median income is 78% of the City-wide median household income. About 45% of all female-headed households needing housing assistance are elderly and handicapped. The balance tend to be young with children and have the attendant problems of securing and paying for child care or obtaining education or training for themselves to increase their incomes.

LARGE FAMILY HOUSEHOLDS

Large households, comprising of 5 or more persons, represent 19.2% of all households in the City. Only 18.6% are family households, the rest are non-family households.

HOMELESS

Homelessness is yet another housing-related problem which has assumed a more acute and wider dimension in recent years. Estimates of the homeless vary as it is difficult to conduct an accurate census. Many homeless people are transient or, fearing authority, have made themselves "invisible". A number, for reasons of mental illness, never seek welfare assistance and thus are never included in any counts. California's homeless population is placed between 75,000 to 100,000, and half of these are found within Los Angeles County. It is also estimated that around 2,000 of this number is in the Southern/Harbor Area of the County, which includes Gardena. It is estimated that between 50 to 100 homeless are in the City at any time.

FARM WORKERS

SCAG's 1983 Regional Housing Allocation Model (RHAM) identifies 56 farm worker households in Gardena eligible for housing assistance. The special housing needs of many farm workers stem from their low wages and the seasonal nature of their employment.

FUTURE HOUSING NEEDS

Under State Law, the City is also required to provide for a share of the regional housing needs. Each local jurisdiction's share is determined by SCAG in the Regional Housing Needs Assessment (RHNA). The RHNA is based on a forecast of market demand for housing, employment opportunities, the availability of suitable sites and public facilities, commuting patterns, the type and tenure of housing need, and the housing needs of farm workers. The Future Housing Needs are distributed among the four income categories: very low income (less than 50% of the metropolitan area median income), low (50%-80% of median income), moderate (80%-120% of median income), and high (more than 120% of median income).

According to the SCAG 1988 RHNA, by July 1, 1994, 1,804 housing units will need to be added to the total housing stock existing on January 1, 1989 (estimated at 18,876) in order to meet the City's share of regional housing needs (assumes a 5% vacancy rate for the market to operate efficiently). Based on the regional distribution of income, the total need is distributed among households in the four income groups, as follows:

CITY OF GARDENA TABLE 19 FUTURE HOUSING NEEDS BY INCOME CATEGORY, 1989-1994		
NEED	UNITS	%
Very Low Income Households (0-50%)	288	15.96
Low Income Households (50-80%)	386	21.40
Median Income Households (80-120%)	371	20.57
High Income Households (120%+)	759	42.07
TOTAL	1,804	100.00
SOURCE: SCAG 1988 RHNA		

CONSTRAINTS IN HOUSING DEVELOPMENT

NONGOVERNMENTAL CONSTRAINTS

Potential nongovernmental constraints on the provision and cost of housing include land costs, construction costs, and the availability of financing. The analysis of these three factors could provide an understanding of the private market forces impacting the price and rent distribution of both the existing and new housing supply.

LAND COSTS

Owing to the City's proximity to major employment centers in Los Angeles including Los Angeles International airport and downtown Los Angeles; accessibility to major transportation corridors such as the 110 (Harbor Freeway), 91 (Gardena Freeway), 405 (San Diego Freeway); and due to the mild climate of the area, land costs are a major contributor to the cost of housing in Gardena.

Developable vacant land is limited in Gardena. As with current construction, future construction will likely involve in-fill, consolidation of existing parcels, conversion to multiple-family housing, including condominiums. According to local real estate sources, lots currently on the market and/or recently sold range from \$30.00 to \$35.00 per square foot for multiple family zoned lots.

CONSTRUCTION COSTS

Materials and labor are the primary components of construction costs. The costs will vary widely depending on the quality of features, design, etc. The construction cost per square foot for a typical new, single family dwelling in the Los Angeles area increased three-fold in the past decade according to the Construction Industry Research Board. While it is difficult to establish a uniform construction cost, local builders estimate it at approximately \$50.00 per square foot.

FINANCING COST

Gardena is similar to most other communities in Southern California with regard to home financing programs in the private sector. Financing costs have significantly increased as a major component of housing cost over the past decade. The higher interest rates that developers have had to pay are passed on to homebuyers in the form of higher prices. The City's First Time Home Buyer Program, authorized by SB 2144, provides down payment assistance to first time home buyers with funds provided through the sale of taxable bonds thereby making funding available to a segment of the housing market not available in other jurisdictions in the state.

HOUSING PRICES AND RENTS

According to a survey of local realtors and developers, current cost estimates (including land, off-site improvement, labor, materials, carrying costs and profit) for a 2,500 square foot detached single-family dwelling in Gardena are in the range of \$300,000. Naturally, some variables such as profit, land and construction costs depend in large measure on the size of the home and the amenities provided. The 1990 U.S. Census shows the median price of single family dwelling at \$200,000.

These constraints also apply to the rental housing market. Land, construction and associated costs operate to constrain the expansion of the rental stock. The 1990 U.S. Census shows the median gross rent in the City of \$592 per month. Rents for two-bedroom units range from \$600 to \$875 a month depending on age of the unit and amenities; a three-bedroom home with yard and garage rents for \$1 000 to \$1500 monthly.

GOVERNMENT CONSTRAINTS

Land use controls, development permits and fees, and property taxes along with regional and State mandated requirements such as environmental impact assessment affect the supply, size, type, location and therefore cost of new housing. These controls, however, are designed to encourage development of functional and quality housing units that contribute to the quality and character of housing stock in the City. Imposition of minimum development standards ensure the health, safety and welfare of the community.

LAND USE REGULATIONS AND BUILDING CODES

The City's Zoning Ordinance provides minimum development standards regulating density, lot coverage, setbacks, height, distance between buildings, etc. to ensure compatibility and orderly development. The City's R-1 and H-B zones are characterized by low density detached units with density of up to 8 single family dwelling units per acre. The R-2 zone which is characterized by duplexes and triplexes at 8-17 units per acre provides for greater densities than many neighboring jurisdictions. The R-3, R-4 and C-R zones are intended primarily for multi-family developments, including condominiums, with a density of up to 27 units per acre. Both the H-B and C-R zones are mixed use zones that provide for residential development along with industrial or commercial uses. The City's building codes are based on the State Uniform Building, Plumbing, Mechanical, and Electrical Codes and are considered to be minimum necessary to protect the public health, safety and welfare.

PROJECT REVIEW AND PROCESSING

Development processing time in Gardena is relatively short and expeditious due to one-step counter and streamlined procedures that have been in place for several years. Multi-family projects, including subdivisions, that require Planning Commission approval, on the average take 10-12 weeks from preliminary review to approval; average building permit plan check time for first corrections is about 4-6 weeks.

FEES, IMPROVEMENTS AND DEDICATIONS

The fees and assessments charged by the City are designed to recover the costs of the services and facilities provided, such as utilities and infrastructure. The assessments are prorated based on the type and size of the project. The City's development permit fees are uniform for all projects, large or small, and are deemed neither exorbitant nor a significant constraint on the development of housing. In addition to on-site improvements required as part of a project's development, off-site improvements imposed are necessary for the public health, safety and welfare. Such improvements may include water, sewer, and other utility line extensions, street construction, and traffic control device installation which are reasonably related to the project. The City's careful utilization of improvement and assessment fees does not impose a constraint on development of housing.

ENERGY CONSERVATION

The City has an active energy conservation program. In addition to required compliance with Title 24 of the California Administrative Code relating to energy conservation, the City encourages water conservation, recycling, weatherization, drought resistant landscaping and other strategies which reduce residential energy costs and increasing utility costs which impact the affordability of housing. Energy conservation plans are required for all new major developments which must have discretionary City approval prior to construction. Additionally, energy implications are considered during CEQA review whereby any potentially significant energy impacts of a project are required to be considered in an EIR.

UNITS AT RISK

Government Code Section 65583 (Chapter 1451, Statutes of 1989) requires local jurisdictions to analyze and adopt programs for preserving assisted housing developments in their housing elements. If there are no affected projects within a jurisdiction, a description of the process used and sources contacted to make this conclusion should be provided.

Currently Gardena has two types of potentially "affected" projects.

- Section 8 Lower-Income Rental Assistance for existing units.
- Section 202 senior housing project.

According to staff of the Los Angeles County Community Development Commission's Housing Authority, 345 households were receiving Section 8 rent subsidies for housing units in the City as of September 1991. Housing Authority staff indicate that they are unable to determine how many of those units are at risk, inasmuch as it is totally up to the landlord to continue to make a unit available for Section 8 or discontinue its participation in the program.

Through HUD Section 202 funds, the City helped finance development costs associated with 200 rental units for senior citizens. Phase 1, consisting of 126 units, was completed in 1985-86, and Phase II, consisting of 74 units, was completed in 1990; Phase III is to be determined based on availability of funding. Due to the high demand for senior housing, and inasmuch as said 200 units were designed and built for seniors, the City does not foresee their conversion into non-senior, non-lower income units during the next ten-year period. These units are, therefore, not considered to be at risk.

REVIEW OF HOUSING PROGRAM ACCOMPLISHMENTS

A review of the City's housing program during the 1984-1989 five-year planning period reveals substantive progress towards the provision of housing for households of all income groups as well as improvement of the City's existing housing stock.

- Effectiveness of the Element - actual results obtained from the implementation of the City's existing Element are as follows:
 - Handyperson Repair Program - Since Its inception in 1978, repair and maintenance services have been provided to 100+ elderly and handicapped low-income homeowners annually to upgrade their housing condition. This program is funded through CDBG funds.
 - Review of Changes in Planned Land Uses - Since 1980 this has been done annually to determine impact on City facilities and services. Specific proposed changes are reviewed by service departments for impact on services. Development activity characteristics and changes are Updated annually and circulated among service departments.
 - Monitor Housing Conditions - Information on housing conditions are obtained on an on-going basis through monitoring of Rent Mediation board activities, code enforcement and inspection activities and truth in sales reports which are required whenever residential property is sold to make the buyer aware of any code deficiencies and deteriorating conditions.
 - Utilization of Federal/State/Local Programs to Assist with High Housing Costs The City has utilized HUD Section 202 funds to finance development costs associated with 200 rental units for senior citizens. In 1986 tax-exempt revenue bonds issued by the City enabled tenants of a 50 unit mobile home park to purchase the park. The City has assisted low income households through the Section 8 Rental Assistance Program administered by the Los Angeles County Housing Authority with active contracts averaging 200+ annually.
 - Condo Conversion Standards and Monitoring - Through the City's condo conversion monitoring program, vacancy rates are monitored annually to determine if conversions will be allowed. Relocation assistance is mandatory for conversions and demolition of existing rental units.
 - Site Acquisition Assistance - The City has worked with private developers to acquire sites for 200 units of senior housing.
 - Investigate the Feasibility of a Land Bank - The City has decided not to proceed with land banking at this time due to the marginal benefits that would accrue from the smaller parcels typically found in the City.
 - Utilization of Property Along Artesia Blvd. for Senior Housing - Property along Artesia Blvd. was deemed less suitable for residential use, however, alternative sites were located for equivalent number of units of senior housing.

- Review of Title 10 to Ensure Compatibility with Housing Element - Zoning Ordinance revisions are evaluated for consistency with the Housing element policies, Amendments have been adopted adding provisions for granny units and manufactured homes in R-1 zone, to implementation Housing Element's policies and programs.
- General Plan and Zoning to Allow Higher Densities - In 1988 the City conducted a City-wide land use survey as part of a comprehensive effort to achieve General Plan and zoning consistency. Density increases were recommended for several parcels.
- Rent Mediation - In 1987 the City established the Rent Mediation Board to assist renters and tenants in rent disputes. Annually the needs of 200+ low and moderate income renter households benefit from the services of this board.
- Removal of Architectural Barriers for Elderly and Handicapped - The City's Home Improvement Program has been providing assistance since 1978 to elderly and handicapped households in removal of architectural barriers,
- Reduction in Site Development Standards - The City has reduced the site development standards for publicly funded senior housing projects.
- Density Bonus - The City has not had requests to take advantage of the State Density Bonus program until recently. The City is currently in the process of implementing such an ordinance in response to a recent request.
- Progress in Implementation – Five Year Action Program - summarizes the type and amount of housing units added during the five year planning period of January 1984 through January 1989:

CITY OF GARDENA TABLE 20 HOUSING PRODUCTION, 1/01/84 – 1/01/89	
Multi-family (Apts)	804
Condominiums	214
Single-family Detached	55
Second Units (Seniors)	6
Senior Housing (Section 202)	126
TOTAL	1,205
Rented Rooms*	468

*Rented rooms are those in hotels and motels which are occupied on a year-round basis providing an additional source of affordable housing for lower income households.

SOURCE: City of Gardena Building and Safety Division Records
City of Gardena, Finance Department Records

In addition to these programs assisting housing production, the City has implemented several programs that have provided housing assistance to lower income households:

CITY OF GARDENA TABLE 21 HOUSING ASSISTANCE PROGRAMS, 1984-89	
Section 8 Rental Assistance	500 ± households
Mobilehome Park Buy-out	50 units
Handyperson Repair	500 ± households
Relocation Assistance	250 ± households
Rent Mediation	500 ± households
TOTAL	1,800

SOURCE: City of Gardena Planning Division Records
City of Gardena Public Works Department Records
Los Angeles County Housing Authority

- Appropriateness of Goals, Objectives and Policies - Many of the City's existing Element's goals, objectives and policies have been refined, redefined, and where appropriate, retained in the updated Element whose main focus is in the maintenance of the existing housing stock, provision of affordable housing, minimization of governmental constraints, and meeting local share of the regional needs. To realize these objectives, the City has developed appropriate yet realistic new policies and specific programs or will continue those contained in the existing Element that have proven to be successful.

HOUSING GOALS, OBJECTIVES AND POLICIES

GOAL

It shall be the goal of the City to provide an adequate supply and variety of housing to meet the housing needs of all segments of the community in a balanced and satisfying residential environment with access to employment opportunities, community facilities and services.

OBJECTIVE 1

To maintain and enhance the stability and quality of the City's housing stock and residential neighborhoods.

POLICIES

1. The City shall encourage the upkeep, maintenance and rehabilitation of existing housing units.
2. The City shall continue to explore programs and funding sources designed to maintain and improve the existing housing stock.
3. The City shall discourage the development of incompatible multi-family residential projects in existing, stable and well-maintained single-family residential neighborhoods.

OBJECTIVE 2

To provide opportunity for increasing the supply of affordable housing units within the City and increase their supply with special emphasis on housing for the City's special needs groups such as senior citizens and handicapped persons.

POLICIES

1. The City shall continue to pursue methods to fund construction of housing for senior citizens and handicapped persons.
2. The City shall discourage the conversion of existing affordable rental units to condominiums.
3. The City shall continue to engage in rental assistance to lower income persons.
4. The City shall consider incentives for new housing construction where deemed appropriate to provide more affordable units.
5. The City shall cooperate with other cities in the area in investigating resources available for housing the area's homeless.

OBJECTIVE 3

To minimize the impact of governmental constraints on housing construction and cost.

POLICIES

1. The City shall continue to monitor procedures and codes to ensure streamlined case processing and permit issuance procedures as well as regulations, ordinances, codes and standards to minimize governmental impacts on housing development costs,
2. The City shall encourage the utilization of innovative construction and design techniques to reduce housing costs.
3. The City shall be receptive to mechanisms such as special development zones to allow more flexibility in housing development projects.
4. The City shall encourage the use of energy efficient technology in the design, construction, and operating systems of residential buildings.
5. The City shall review ways to provide zoning, land division and construction incentives to reduce the cost of new and rehabilitated housing.

OBJECTIVE 4

To encourage development of housing to meet the City's local housing needs and meet its share of regional needs to the extent possible.

POLICIES

1. The City shall encourage a wide range of housing types, prices, and ownership forms in new housing developments.
2. The City shall continue to encourage development of Second Unit additions - granny units for senior citizens.
3. The City shall assist the private sector in identifying, aggregating, and preparing land suitable for housing developments to meet the needs of low and moderate income families.
4. The City shall encourage the Southern California Association of Governments (SCAG) and the State of California to assign a fair and equitable distribution of regional housing demands to all cities based on the ability of a city to accommodate additional growth and intensification, and the amount and percentage of existing affordable units in a city.

HOUSING PROGRAMS

The following current and future programs set forth actions the City will take over the next five year period to accomplish the goals, policies and objectives of the Housing Element.

CURRENT PROGRAMS

1. Senior Citizen Housing	Phase 11 of this project involved the construction of 74 new affordable rental units for eligible senior citizens. Phase I comprising of 126 rental units was completed during 1985-86.
Funding Source	HUD Section 202
Phasing Timing	Phase I completed 1985-86. Phase 11 completed 1990. Phase III to be determined based on funding availability.
Benefit	200 senior citizen households.
Responsible Agency	City Manager's Office
2. Village Mobile Home Park Lease Purchase Program	Through City issued tax-exempt revenue bonds in the amount of \$1.4 million, the tenants of Village Mobilehome Park were able to purchase their park. Park residents pay \$300.00 per month which goes toward retiring the bonds over a 20-year period. The City has utilized CDBG funds to provide infrastructure improvements.
Funding Source	Tax-exempt bonds revenue.
Phasing/Timing	Park purchase transaction in 1986. Park improvements on-going.
Benefit	50 low income households, including seniors.
Responsible Agency	City Manager's Office.
3. Section 8 Rental Assistance	Rent subsidies are provided to lower income households so that no more than 25% of their monthly household income is spent on housing.
Funding Source	Section 8.
Phasing/Timing	On-going.
Benefit	<u>200+</u> low income households of which 50% are families 40% elderly and 1 0% large families.
Responsible Agency	Los Angeles County Housing Authority under contract with the City.

4. Home Improvement Program	Under this program repair and maintenance services and handicap retrofit services are provided for low-income home-owners to upgrade their housing conditions.
Funding Source	CDBG.
Phasing Timing	On-going.
Benefit	100-125 low income households annually.
Responsible Agency	Public Works Department.
5. Rental Units Rehab	The City has authorized Los Angeles County to administer the HUD Rental Rehab Program to rehabilitate rental units occupied by low and moderate income households who have incomes equal to or less than the Section 8 lower income limits.
Funding Source	HUD.
Phasing/Timing	On-going.
Benefit	Low income households.
Responsible Agency	City Manager's Office.
6. Rent Mediation	The City's Rent Mediation Board, created in 1987, provides rent mediation/arbitration to assist renters in rent disputes thereby insuring that they are not subjected to excessive and unwarranted rent hikes and housing conditions.
Funding Source	Salaries/stipends for the 15-member board are paid through the City General Revenue Fund.
Phasing/Timing	On-going.
Benefit	Annually 200+ low and moderate income renter households.
Responsible Agency	City Manager's Office.
7. Relocation Assistance	This program is mandatory and applies to tenants of multiple family residential rental units and trailer parks demolished or converted to condominium or other land use changes.
Funding Source	Private property owner/developer.
Phasing/Timing	On-going.
Benefit	Annually 50+ low and moderate income households.
Responsible Agency	Community Development Department

8. Condominium Conversion Ordinance	The purpose of this condominium conversion ordinance is to minimize the adverse impacts resulting from the conversion of rental units to condominiums and to ensure a healthy mix of owner and renter housing units; and to insure that any common interest developments are designed in such a way as to prevent detrimental impact on the public health, safety and welfare.
Funding Source	N/A.
Phasing/Timing	On-going.
Benefit	Varies
Responsible Agency	Community Development Department.
9. Vacancy Rate Survey	The City conducts an annual survey of all residential rental units to determine rental vacancy rates. When this rate drops below 3%, a moratorium is placed on condominium conversions.
Funding Source	N/A.
Phasing/Timing	On-going.
Benefit	Renters who may be displaced by the conversion of their units to condominiums.
Responsible Agency	Community Development Department.
10. Neighborhood Improvement Program	The purpose of this program is to eliminate and/or prevent further blight and physical deterioration in one of the oldest sections of the City by providing rehabilitation assistance to property owners. The neighborhood surrounding the project area includes a large number of elderly and long time residents of the City.
Funding Source	CDBG.
Phasing/Timing	On-going.
Benefit	Since the inception of this program, over \$200,000 has been awarded to 26 applicants.
Responsible Agency	City Manager's Office

11. Second Unit Ordinance	Pursuant to state law, the City allows the construction of "Granny Unit" second units on R-1 zoned lots developed by single-family dwellings, provided the occupants of the second units are 62 years and older.
Funding Source	Private property owner.
Phasing/Timing	On-going.
Benefit	Senior citizens 62 years and older. During the life of this ordinance, all 14 requests for second units have been approved.
Responsible Agency	Community Development Department.
12. First Time Home Buyers	The City's First Time Home Buyer Program, authorized by SB 2144, provides down payment loans to first time home buyers funded through taxable municipal bonds. A first time home buyer is a person who has not owned a home within the last three years, who lacks the necessary downpayment, and is unable to take advantage of conventional loan programs, due to the fact that they lack the necessary down payment.
Funding Source	Private lending institutions and City issued taxable bonds. -
Phasing/Timing	On-going.
Benefit	It is estimated that over 100 Gardena households will benefit from this program. as of December 31, 1991, 64 units have been financed.
Responsible Agency	City Manager's Office

NEW PROGRAMS

The City will investigate the feasibility of implementing the following additional programs:

1. Incentives for Private Development of Senior Housing	Provide incentives for the development and construction of senior citizen housing developments pursuant to Government Code Section 65915.
Funding Source	City.
Phasing/Timing	1991.
Benefit	Senior Citizens.
Responsible Agency	Community Development Department.

2. Housing Fund for Affordable Housing	Investigate the feasibility of a housing trust fund whereby developers of multiple units who choose not to produce low and moderate income units may contribute in-lieu fees which could be used for the production or enhancement of affordable units.
Funding Source	Developers of housing.
Phasing/Timing	1994.
Benefit	Lower income households.
Responsible Agency	Community Development Department.
3. Alternative Arrangements for Seniors and Other Special Need Groups	Review impediments to establishment of alternative living arrangements for special need groups by providing technical support to programs which can provide such arrangement
Funding Source	City.
Phasing/Timing	1992.
Benefit	Special need groups, especially seniors.
Responsible Agency	Community Development Department.
4. Incentive for Housing Maintenance and Rehabilitation	Expand current grant programs and provide financial incentive programs for the maintenance and rehabilitation of existing residential structures, including possible, low-interest loans, financial grants, tax rebate and other techniques.
Funding Source	CDBG.
Phasing/Timing	1993.
Benefit	Owners of existing housing units.
Responsible Agency	City Manager's Office.
5. Technical Support	Develop program to improve the public knowledge regarding the technical means to maintain and rehabilitate residential structures, including publication of home improvement information and possibly provision of field technical assistance to seniors, low-income and others.
Funding Source	Community Development Department.
Phasing/Timing	1992.
Benefit	Homeowners.
Responsible Agency	Community Development Department.

6. Aid to Homeless	Provide a full range of housing referral services to homeless individuals. Review zoning ordinance for impediments to establishing temporary shelters.
Funding Source	Recreation & Human Services Department.
Phasing/Timing	On-going.
Benefit	Homeless persons/households.
Responsible Agency	Recreation & Human Services Department.
7. Security Funds for Housing	Work with charitable organizations, private foundations, and other institutions in securing funds and participating in the development of affordable housing.
Funding Source	1995.
Benefit	Lower income households.
Responsible Agency	City Manager's Office.
8. Reasonable Fee Rates	Review any proposed fee rates for permits and applications for impacts on the production of new housing units.
Funding Source	Community Development Department.
Phasing/Timing	On-going.
Benefit	Developers of housing.
Responsible Agency	Community Development Department.
9. Mixed Use Zoning	Review zoning ordinance to broaden flexibility in considering mixed uses designs that will assist in improving the quality and quantity of housing units.
Funding Source	City.
Phasing Timing	1992.
Benefit	All residents.
Responsible Agency	Community Development Department.

10. Housing Finance Availability	Establish a program to increase participation of financial institutions in the City in production, maintenance and rehabilitation of housing units in the City.
Funding Source	City.
Phasing/Timing	1992.
Benefit	All residents.
Responsible Agency	Community Development Department.

ANNUAL (FIVE YEAR) HOUSING GOALS

The City's annual (five year) housing goals for the planning period 1989 through 1994 are as follows:

CITY OF GARDENA TABLE 22 ANNUAL (FIVE YEAR) HOUSING GOALS		
	ANNUAL	5 YEARS
Very Low Income Units	57	288
Low Income Units	77	386
Moderate Income Units	74	371
High Income Units	152	759
TOTAL UNITS	360	1,804
Figures include:	Household Growth 7/89 to 7/94	1,294 Units
	Vacancy Adjustment	248 Units
	Demolition Adjustment	63 Units
SOURCE: SCAG 1988 RHNA		

QUANTIFIED OBJECTIVES OF HOUSING PROGRAM

During the first two years of the 1989 thru 1994 planning period, 690 new units were completed. Based on the annual average of previous planning periods, it is estimated that an additional 500-600 new units could be added to the housing stock by the private sector through infill, conversion, and consolidation of parcels, for a total of approximately 1,200 units for the 1989 thru 1994 period. Naturally, favorable economic conditions, continued high demand, and availability of developable properties have to be factored into this forecast. It is expected that the City's existing infrastructure capacities should be able to accommodate this projected gradual growth.

Since the unassisted private market will probably provide sufficient units (estimated at approximately 1,200 during the 1989-1994 planning period) for moderate to high income households, the following table illustrates the City's strategy to enhance housing opportunities to meet the balance of the regional share of housing units:

CITY OF GARDENA		
IMPLEMENTATION MEASURE	TABLE 23 QUANTIFIED OBJECTIVES OF HOUSING PROGRAM ANNUAL (5 YEARS)	
	VERY LOW	LOW
Home Improvement Program (Conservation)	42 (210)	58 (290)
Section 202 (New Construction)	(31)	--- (3)
Downtown Revitalization Program (Rehabilitation)	1 (5)	1 (5)
Village Mobilehome Park (Conservation)	-- (36)	-- (49)
Second Units (New Construction)	2 (5)	2 (5)
Total Projected Units	45 (288)	61 (393)
RHNA Goal	(288)	(386)

SOURCE: City of Gardena Housing Assistance Plan
City of Gardena Planning Division Projections
SCAG 1988 RHNA

STATE HOUSING PROGRAM

The State of California has formulated an aggressive program directed at providing and improving housing. Implementation by the city or state housing law and policy represents an affirmative, significant effort in and of itself. This section briefly summarizes some of the more important state laws associated with the provision of adequate housing.

DENSITY BONUSES

Cities and counties must give a density increase (or bonuses of equivalent financial value) of at least 25% over the otherwise maximum allowable residential density under the Zoning Ordinance and the Land Use Element of the General Plan to builders who agree to construct housing developments with 25% of the units affordable to low or moderate income households or 10% of the total units affordable to lower income households.

SECOND UNITS

State law facilitates the creation of units without additional land costs by permitting jurisdictions to allow second units in single-family zones if they conform to certain criteria.

FAIR HOUSING

State law prohibits discrimination in the development process against housing projects for low and moderate income households.

MOBILE HOMES

State law precludes local governments from prohibiting the installation of mobile homes on permanent foundations on single-family lots. It also declares a mobile home park to be a permitted land use on any land planned and zoned for residential use, and prohibits requiring the average density in a new mobile home park to be less than that permitted by the applicable zoning ordinance.

AFFORDABLE HOUSING ON SURPLUS LANDS

State law gives priority to the use of surplus land for the development of low or moderate income residences and provides for its sale to local governmental agencies at less than market value for that purpose.

EXCESS BUILDING STANDARDS

State law prohibits the imposition of building standards that are not necessitated by local geographic, climatic or topographic conditions and requires that local governments making changes or modifications in building standards must report such changes to the Department of Housing and Community Development and file an express finding that the change is needed.

RESIDENTIAL ENERGY CONSERVATION

State law requires all new construction to comply with "energy budget" standards which establish maximum allowable energy use from depletable sources. These requirements apply to such design components as structural insulation, air infiltration and leakage control, setback features on thermostats, water heating system insulation (tanks and pipes) and swimming pool covers if a pool is equipped with a fossil fuel or electric heater. State law also requires that a tentative tract map provide for future passive or natural heating or cooling opportunities in the subdivision, including designing the lot sizes and configurations to permit orienting structures so as to take advantage of a southern exposure, shade or prevailing breezes.

RESIDENTIAL WATER CONSERVATION

State law requires all new residential units to be equipped with water-saving fixtures.

EXPEDITED PROCESSING

Housing projects containing at least 25% of the units for low- or moderate-income families are exempt from the three-times-per-year restriction on amendments to mandatory elements of the General Plan.

FEES LIMITATIONS

State law, including the recently enacted AB 1600, limits fees charged for zoning variances, zoning changes, use permits, building permits and the processing of maps under the provisions of the subdivision Map Act to the estimated reasonable cost of providing the service for which the fee is charged.

SUBSTANDARD UNIT IMPROVEMENT

State law prohibits owners of substandard rental dwellings cited for code violations from taking State income tax deductions for interest, taxes and depreciation. Extra tax revenues collected under this provision go to local governments to support code enforcement efforts, to build low and moderate income housing, and to minimize neighborhood displacement.

MORTGAGE REDLINING

Under State law, it is illegal for State-chartered savings and loans to discriminate against entire neighborhoods in lending practices because of the physical or economic conditions in the area.

ARBITRARY DISCRIMINATION

State law prohibits arbitrary discrimination in real property transactions on the basis of sex, race, color, religion, ancestry, or national origin.

COMPREHENSIVE PLANNING

ENVIRONMENTAL REVIEW

Based on the findings of the Environmental Assessment (Initial Study) conducted by the Planning Division, it was determined that this revision of the Housing Element would have no significant adverse impacts on the environment. Therefore, a Negative Declaration was issued. The Chapter Goals, Policies, and Programs contains programs to meet the City's housing needs. It is the implementation of those programs which must be reviewed for impact on the environment.

GENERAL PLAN CONSISTENCY

The Housing Element is one of seven elements required by state law to be part of each city's general plan. The other six elements are: land use, circulation, open space, conservation, safety and noise. The California Government Code requires that general plan elements be consistent with one another. When any one element is revised, especially when new policies and programs are proposed, the other elements must be reviewed to insure that internal consistency is maintained.

A number of the required general plan elements provide input to the housing element while others are a means to carrying out the goals and policies of the housing element. Four elements in particular concern environmental or mandate factors which limit the location or type of housing that can be developed. Safety and noise elements address hazards or nuisances which should be avoided in the location of housing or mitigated in the construction of housing. Open space and conservation elements concern land resources which should be protected from development. All these factors will ultimately affect the type, location and cost of housing and could, therefore, also affect the community's ability to meet the goals of its housing element.

On the other hand, housing element goals and policies are reflected and in large measure carried out through the land use and circulation elements. The land use element designates the distribution and location of housing as well as other types of uses and activities. The circulation element designates the location and scale of thoroughfares, city streets and transportation routes which support and provide access to the proposed land use designations.

PREPARATION, UPDATE AND REVIEW

PUBLIC PARTICIPATION

Effective citizen input into the housing element process is an integral and important factor which must be encouraged to ensure an adequate element that addresses the needs of all segments of the community. The local citizenry can serve as a valuable resource not only in developing the housing element but also in monitoring its implementation and in periodically updating its content.

Prior to the adoption of this element the City will make every effort to provide maximum accessibility to and direct involvement by all segments of the community. Copies of the draft will be available at: City Clerk's Office, Community Development Department and Gardena Library. It will also be sent to the following entities seeking their review and comments:

Los Angeles County	Gardena Board of Realtors
City of Los Angeles	Los Angeles City Schools
City of Torrance	Southern California Edison Company
City of Hawthorne	Southern California Gas Company
SCAG	Southern California Water Company
Gardena Chamber of Commerce	

In addition to the discussion sessions, noticed public hearings will be held before both the Planning Commission and City Council during which citizen input will be received.

INTERGOVERNMENTAL COORDINATION

Input and comments will be sought from local, regional and state agencies which are often involved in program planning and implementation activities that affect and are affected by local housing planning. Public agencies are often in a position to contribute valuable information and assistance to local housing element efforts. The draft of the Element was mailed to the State Department of Housing and Community Development for their review and comments. Copies of the draft housing element will also be sent to:

Southern California Association of Governments (SCAG)
Los Angeles County Regional Planning Commission

UPDATE AND REVIEW

The City shall update the Housing Element at least every five years to reflect changing social and economic trends. The revision shall include, as appropriate:

1. Revision of the needs analysis to incorporate new census data at five year intervals when available.

2. Revision of the housing program to:
 - (a) Evaluate the effectiveness of the housing program in reaching established goals and objectives.
 - (b) Set out plans the City has undertaken since the last update or intends to implement in the future.
 - (c) Identify current plans which have been discontinued since the last update or will be discontinued.

RESOLUTION NO. 4164

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF GARDENA
CALIFORNIA, ADOPTING THE REVISED HOUSING ELEMENT OF THE
GENERAL PLAN.

WHEREAS, pursuant to authority in Government Code Section 65300 et seq. and 65580 et seq. each local jurisdiction in the State is required to include, as a mandatory element of its general plan, a housing element which makes adequate provision for the housing needs of all economic segments of the community;

WHEREAS, the City's revised Housing Element complies with the requirements in said Code sections;

WHEREAS, the Planning and Environmental Quality Commission of the City of Gardena held a public hearing on July 7, 1992 to receive public testimony on said revised Housing Element;

WHEREAS, the City Council has conducted a public hearing and received public testimony on said revised Housing Element;

WHEREAS, at the conclusion of the public hearing the City Council did approve the revised Housing Element of the General Plan based upon the following findings:

1. That the proposed revision to the Housing Element conforms with the 19 guidelines established by the State of California and as previously reviewed by the Department of Housing and Community Development.
2. That the revised Housing Element has been amended to address the concerns as expressed by the state and does provide appropriate programs and policies to implement the state guidelines;

3. That after considering the record as a whole, the revised Housing Element involves no potential for adverse effect, either individually or cumulatively on wildlife resources or the habitat on which the wildlife depends;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF GARDENA, CALIFORNIA DOES HEREBY ADOPT THE revised Housing Element of the General Plan;

IT IS FURTHER RESOLVED THAT the City Clerk shall certify to the passage and adoption of this resolution; shall cause the same to be entered among the original resolutions of said City; and shall make a minute of the passage and adoption thereof in the records of the proceedings of the City Council of said City in the minutes of the meeting at which the same is passed and adopted.

Passed, approved and adopted this 25th day of August 1992.

/S/ DONALD L. DEAR
MAYOR OF THE CITY OF GARDENA,

CALIFORNIA

ATTEST:

/s/ May Y. Doi, CMC
City Clerk of the City of Gardena, California

(SEAL)

APPROVED AS TO FORM

MICHAEL J. KARGER
CITY ATTORNEY

STATE OF CALIFORNIA)

COUNTY OF LOS ANGELES) SS

CITY OF GARDENA)

I ,MAY Y. DOI, City Clerk of the City of Gardena, do hereby certify that the whole number of members of the City Council of said City is five; that the foregoing Resolution being Resolution No. 4164, was duly passed and adopted by the City Council of said City of Gardena, approved and signed by the Mayor of said City, and attested by the City Clerk, all at a meeting of said City Council held on the 25th day of August, 1992, and that the same was so passed and adopted by the following roll call vote:

AYES: Council Members Cragin, Tsukahara, Duffy, Fukai and Mayor Dear

NOES: None

ABSENT: None

/s/ May Y. Doi, CMC
City Clerk of the City of Gardena

(SEAL)



CITY OF GARDENA

CIRCULATION &

SCENIC HIGHWAY-ELEMENT

PREPARED BY
PUBLIC WORKS DEPARTMENT
AND
ALLEN VOORHEES & ASSOCIATES

STAFF

FRANK GUTIERREZ, PUBLIC WORKS DIRECTOR

RUSSELL MAGUIRE, ASST. CITY ENGINEER

ADOPTED

MARCH 11, 1975

RESO. NO. 3118

CITY COUNCIL

EDMOND J. RUSS, MAYOR

WILLIAM L. COX

MASANI (MAS) FUKAI

DONALD T. HATA

CHARLES A. NADER

PLANNING & ENVIRONMENTAL QUALITY COMMISSION

KAY ADLEY, CHAIRPERSON

BURT S. NAKAMURA

JOE YAMAMOTO

RICHARD MOORE

WILLIAM GERBER

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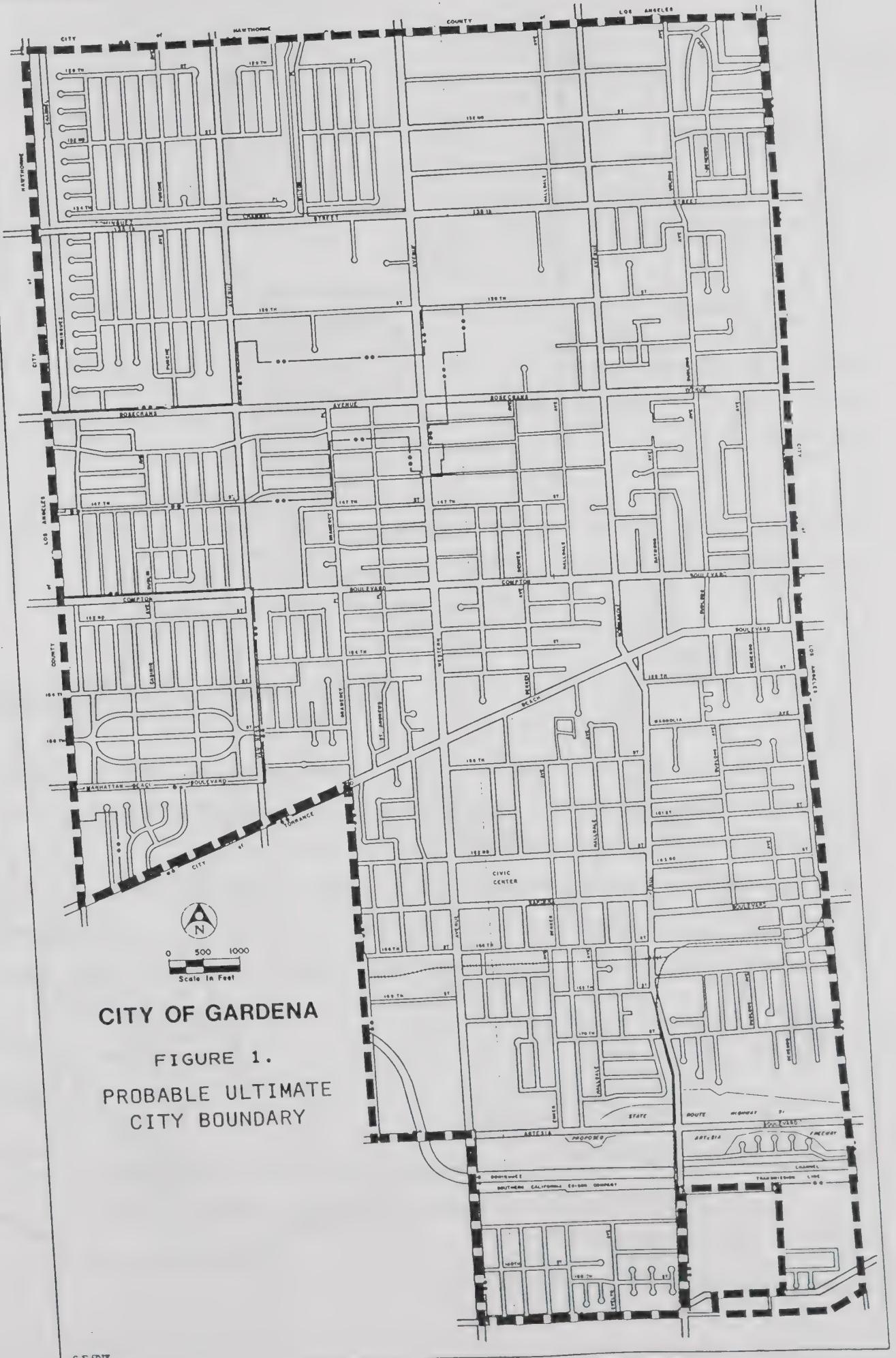
I. INTRODUCTION

Gardena is located in the South Bay area of Los Angeles County. Its current population is approximately 46,000. Gardena is rich in character, with an agrarian past. Its "melting pot" ethnic mixture is composed of 56.7 percent White, 23.4 percent Asian, 15.4 percent Spanish American, 3.6 percent Black, and 0.9 percent "other" residents. It is mainly a commuter-type community; the majority of its workers have jobs outside City limits. In addition, the community is virtually at full development (only 6 percent of its total land is vacant), and its density is expected to increase only slightly. Four parcels of land (shown in the preliminary Land Use Element) outside the present City boundaries are considered within Gardena's sphere of influence. If these parcels are annexed at some future date, Gardena's border would then be squared off as shown in Figure 1.

Regional access is provided mainly by the nearby Harbor and San Diego Freeways (State Route 11 and Intrastate 405, respectively). Figure 2, reproduced from the preliminary Land Use Element, depicts Gardena's location within the surrounding area and major transportation facilities including freeways, airports, and railroads. This figure readily shows Gardena as a focal point for major north-south and east-west travel movements in the South Bay area. Also evident is the fact that much east-west and north-south through traffic filters across Gardena's arterials, which connect several South Bay communities. Unless this through traffic is diverted to future freeways, Gardena's circulation system must contend with it along with its local intra-community trips.

This circulation element is intended to provide guidelines for improving circulation of the following transportation modes:

- Automobile
- Truck



CITY OF GARDENA

FIGURE 1.

**PROBABLE ULTIMATE
CITY BOUNDARY**

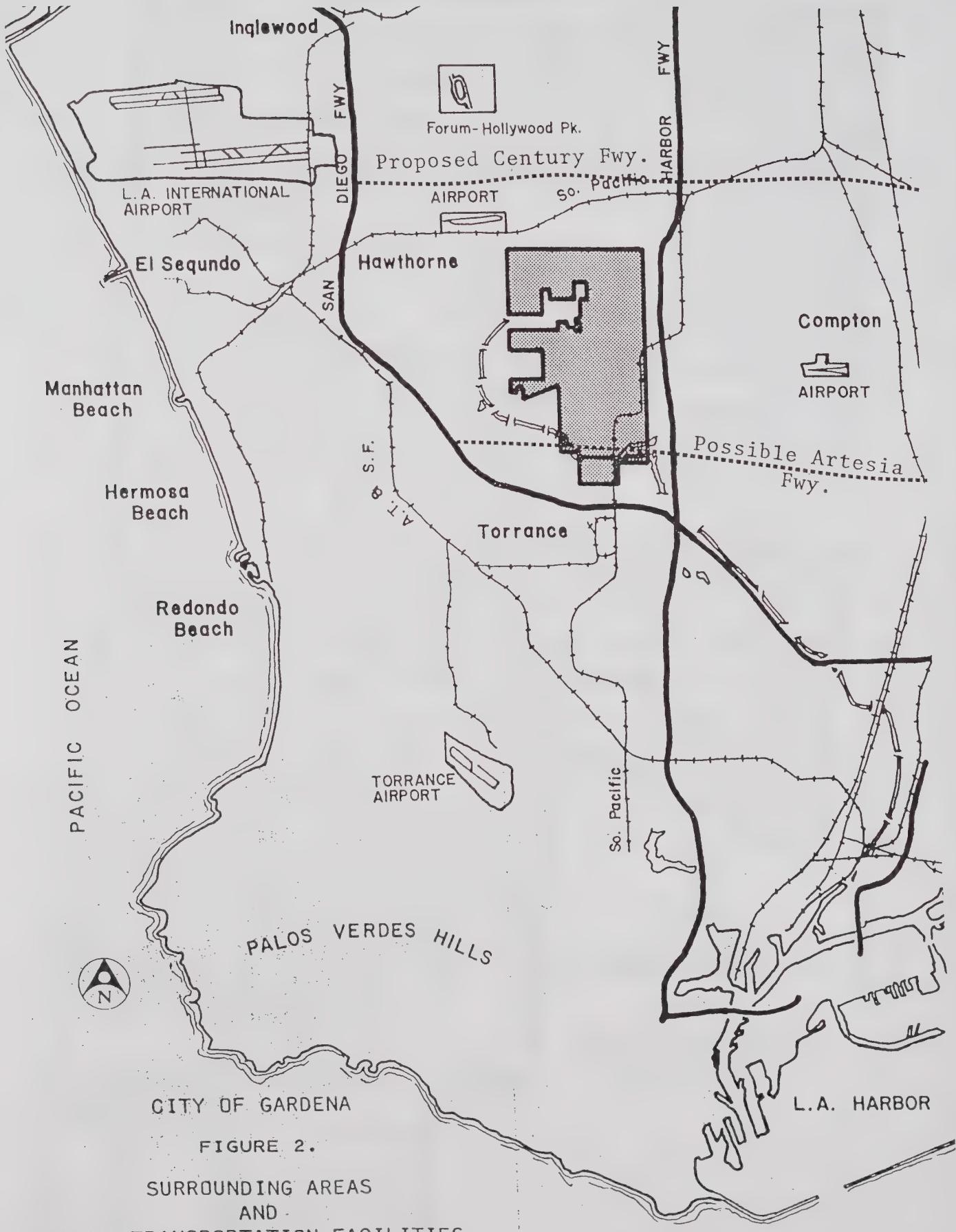


FIGURE 2.
SURROUNDING AREAS
AND
MAJOR TRANSPORTATION FACILITIES

- Transit
- Bicycle
- Pedestrian
- Rail

AUTHORITY

Through Title 7, Chapter 3, Article 5, the State of California has mandated that city and county governments adopt a general plan. Section 65302(b) requires a circulation element in all city and county general plans, as follows:

“....a circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals and facilities, all correlated with the land use element of the plan.”

RELATIONSHIP TO OTHER ELEMENTS

Preparation of the circulation element has been coordinated with the preliminary Land Use Element prepared by the Gardena Community Development Department Planning Division. The preliminary Land Use Element details the existing land use mix, setting, character, population, and probable future boundaries of Gardena within the framework of General Plan requirements. Also detailed are eight land use problem areas within the City. Within the circulation element, the issues arising from each of these problem areas are discussed, and potential measures for alleviating them are presented.

GOALS

Goals are generally broad in scope and relate to conditions which are to be strived for. In terms of transportation, the following goals may be applied to the Gardena circulation element:

- Provide a system of streets and highways which will promote the safe and efficient movement of future traffic and goods throughout Gardena.
- Develop a circulation system which is economically feasible and consistent with previous local and regional planning efforts.
- Identify bicycle/pedestrian corridors in order to implement a bicycle and pedestrian circulation system within Gardena.
- Discourage use of residential and local streets by through traffic.
- Complement and reinforce the land use element wherever possible. It is most important that the circulation element serve the proposed land use, rather than the opposite.
- Establish policies which will improve mobility for the non-driving segments of Gardena's population. This group generally includes the elderly, the young, the handicapped, and the disadvantaged.
- Provide a circulation system which will have a favorable environmental impact upon the Gardena area.

II. EXISTING CONDITIONS

In order to develop a circulation element concerning the future of Gardena, it is first necessary to inventory and evaluate existing circulation problems facing Gardena's residents.

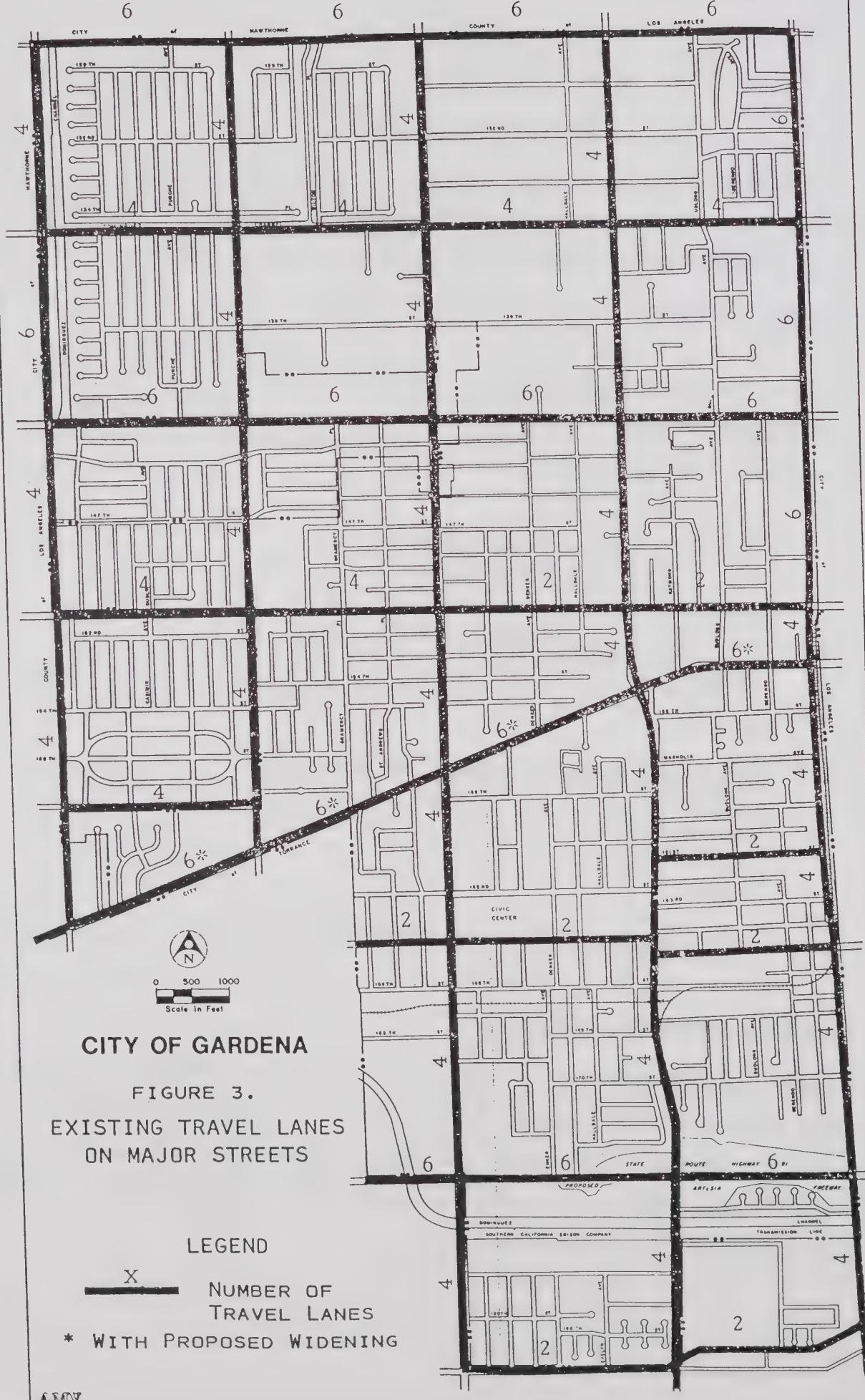
INVENTORY

The first step in evaluating Gardena circulation was to obtain basic data concerning the existing street system (shown in Figure 1). This data, provided by the City of Gardena Public Works Department, included the following:

- Existing rights-of-way and street widths
- Traffic volume/capacity analysis for major streets
- Traffic control device locations
- Accidents
- Preliminary design report for Redondo Beach Boulevard
- Select street system
- Bus service
- Rail crossings and airport access

Existing Street Widths and Rights-of-Way

Information and maps provided by the City generally showed that, due to the small size of available rights-of-way, there are many restraints on potential widenings within existing rights-of-way. Pavement widths were provided for both local streets and major arterials. Also provided were lane configurations at major intersections. Figure 3 shows the number of existing travel lanes on the major street system in Gardena.



Traffic Volume/ Capacity Analysis for Major Streets

The City of Gardena recently concluded a study which provided capacity calculations and existing volumes for all major streets in Gardena. These calculations were based upon directional counts and known signal splits of cycle time. While not absolute, this methodology is consistent and provides a good method of ranking intersection deficiencies. Figure 4 is a reproduction of the existing 1974 traffic volumes as found from this study.

Traffic Control Devices

There are a total of 69 signals located within the City of Gardena. Of these 15 are fixed-time, 40 are semi-actuated and 14 are fully actuated signals. Observations of signal operations revealed many are not operating at optimum efficiency. Signals are very important elements of traffic, bicycle, and pedestrian circulation, and it is desirable for the circulation element to reflect existing signal locations and provide some guidance for the placement of future signals. Stop and yield sign location maps were also provided to the consultant. These devices further define existing traffic flow.

Accidents

In order to function well, a circulation system must be devised to minimize the chances for future accidents. In some instances, it has been found that accident problems sometimes relate closely to capacity problems. Figure 5 depicts high accident locations (five or more accidents per year) in Gardena, along with the worst capacity-deficient locations as found in the City's recent volume/capacity study (one or more approaches at level "D" or worse).



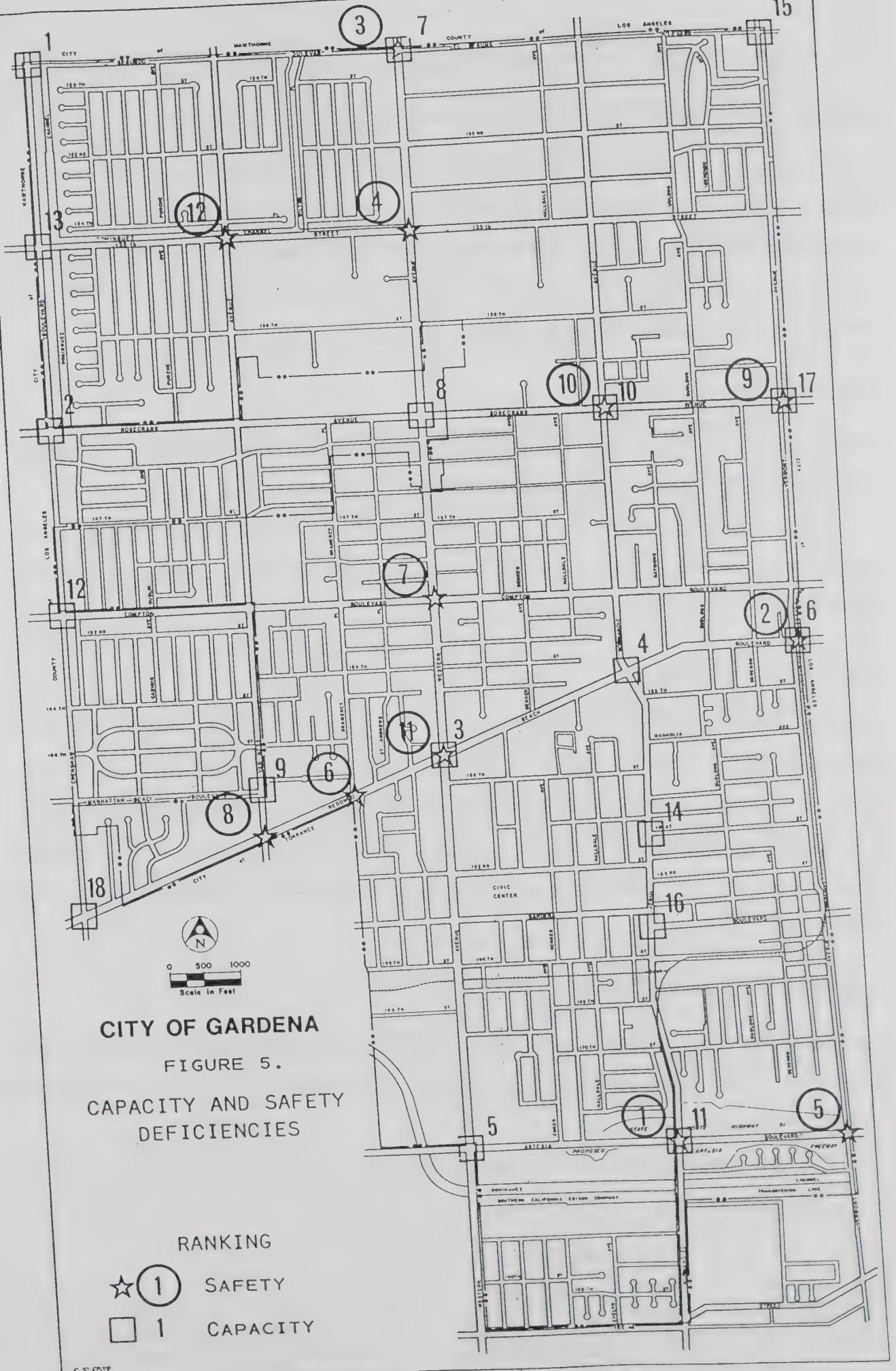
CITY OF GARDENA

FIGURE 4.

1974 TRAFFIC FLOW DIAGRAM

LEGEND





Preliminary Design Report for Redondo Beach Boulevard (Crenshaw to Vermont)

A recent study by Don Greek and Associates recommended that Redondo Beach Boulevard be widened to 84 feet from an existing width of 74 feet to accommodate six lanes of traffic with a two-direction center left turn lane. Parking is recommended to be prohibited from 7:00-9:00 a.m. and from 4:00-6:00 p.m. Projected 1985 traffic volumes along Redondo Beach Boulevard were estimated to vary from 37,000 to 44,000.

Select Street System

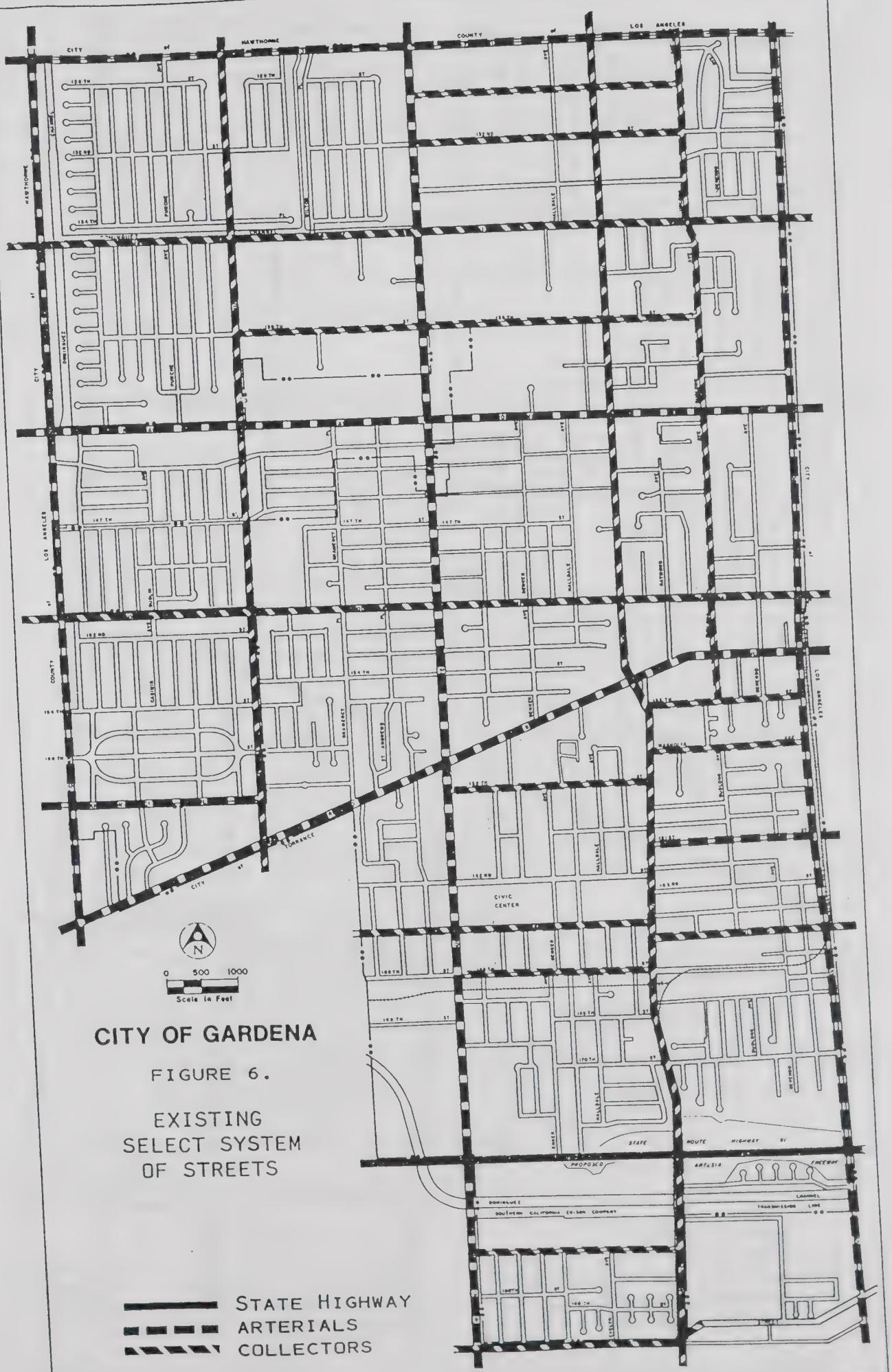
Recently, the City of Gardena approved a select street system which depicted the existing arterials, collectors, and state highways within Gardena. The circulation element builds upon this system of select streets to provide a new system of arterials and collectors which will be able to adequately accommodate future traffic flows. The existing select street system is illustrated in Figure 6.

Bus Service

Presently, the Gardena Municipal Bus Company, located at 15350 South Van Ness Avenue, operates five bus lines within Gardena. These five lines are shown in Figure 7. Service provided varies from 1/2 hourly to 5 trips daily. It is estimated that about 5,000 passengers are carried each day (based upon 1970 data). Geographic coverage of the bus lines within the City of Gardena is quite good--more than 90 percent of the City's geographic area lies within a quarter-mile from a bus line.

Rail Crossings and Airport Access

Southern Pacific Railroad has two railroad spurs within Gardena. About two trains per day use the Vermont-166th-Normandie spur, while about three trains per week utilize the 166th Street spur west of Normandie Avenue.

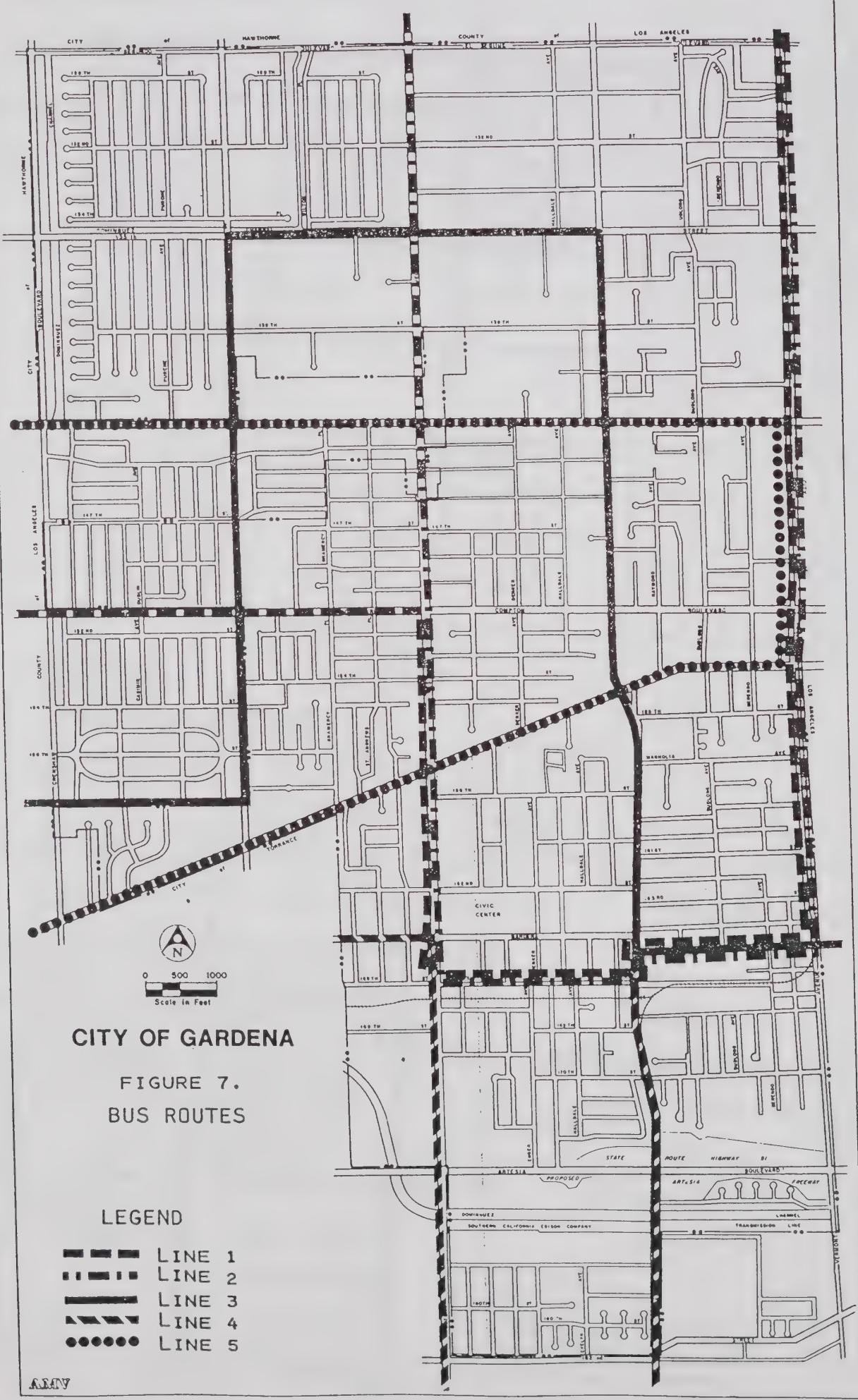


CITY OF GARDENA

FIGURE 6.

EXISTING SELECT SYSTEM OF STREETS

**STATE HIGHWAY
ARTERIALS
COLLECTORS**



Although there are no airports within Gardena, the City is located within eight miles of three airports- -Torrance (General Aviation), Compton (General Aviation), and Los Angeles International Airport.

PROBLEMS AND ISSUES

An examination of the collected data describing existing traffic conditions revealed that several problems and issues are affecting Gardena's circulation.

- Peak-hour congestion is probably the main problem now confronting Gardena residents. With slight, but continued traffic growth expected into the future, this problem will plague Gardena until alternative routes for through traffic are provided. In conjunction with the previous problem is the question of future freeways. When will they occur, and how will they affect traffic circulation in Gardena?
- Future land use is another important consideration. What effect will zoning changes have on traffic circulation? The preliminary land use element cited several areas where community revitalization opportunities were present. Where can the circulation element reinforce and assist in capitalizing on these opportunities?
- Another issue which must be stressed is that of safety. Presently, 12 intersections have five or more accidents annually (six of these locations are also deficient in capacity). It is desired that motorists, pedestrians, and bicyclists interact safely within the circulation system.
- In the area of pedestrian and bicycle circulation, another issue concerns defining bicycle and pedestrian corridors. Where are they, and how can they be accommodated?
- Parking, both on- and off-street is important. Where should it be provided, and how should it be regulated to satisfy demand while, at the same time, facilitate traffic flow?
- Environmentally, how can motor vehicle delays be minimized to lower pollution emission rates within Gardena?

III. FUTURE CONDITIONS

With the main issues and problems defined, the next step consisted of analyzing future projections for the Gardena area.

In developing future projections, it is important to realize that, population-wise (except for annexations), Gardena is not expected to grow significantly since it is almost fully developed. However, the area around Gardena and its own land use will have an impact on the circulation system required for Gardena.

TRAFFIC PROJECTIONS

Both the State of California (through CALTRANS) and the County of Los Angeles, have made assignments of future traffic to the South Bay area. Based upon screenlines compiled from these estimates, it is the consultants judgment that future traffic in Gardena will change as follows:

- The arterial through traffic will continue to grow slowly until about 1985, when the Century Freeway (I-105) is expected to be completed. This freeway is already adopted and, if completed, would relieve east-west arterials in Gardena significantly. The Artesia Freeway, S. R. 91, has not been adopted and was not included in the assignment. If it is completed westerly through to I-405, further east-west congestion relief of Gardena's arterials would likely be experienced.
- Following the projected completion of the Century Freeway in 1985, east-west arterial traffic in Gardena should decrease to existing or slightly lower levels. On the other hand, north-south arterial traffic should slightly increase north of Redondo Beach Boulevard and decrease by nearly the same amount south of Redondo Beach Boulevard. (This is without the Artesia Freeway, which, if extended to I-405, would further decrease through traffic in Gardena.)
- On-off ramps of the Harbor Freeway will be closed at Alondra Boulevard-161st Street and opened at Redondo Beach Boulevard.

Land Use Changes, Local and Regional

Future land use changes will impact on Gardena's circulation system, whether local or regional in nature. The circulation system should have the flexibility to accommodate expected changes in local land use and should, if possible, anticipate regional changes well in advance of their occurrence. From a regional standpoint, the addition of a regional shopping center or a major new industrial park in a nearby city could have a significant impact upon Gardena's street network. Such future nearby proposals, if any, should be monitored carefully.

Redondo Beach Boulevard and Gardena Boulevard are two locations where a revitalization of commercial developments are planned. An important part of revitalizing these two areas is the circulation and access provided to them.

Redondo Beach Boulevard is being widened to 84 feet; this widening should be utilized to relieve congestion and improve traffic flow along the Boulevard. For instance, parking along Redondo Beach Boulevard could be prohibited 24 hours a day. Direct access to abutting properties might not be allowed from intersections. The two-way center left-turn lane could be utilized to provide counter-flow access to commercial areas.

Gardena Boulevard presents a unique problem, since angle parking is presently allowed in its commercial area. A proposal for this area is presented in Chapter IV.

Industrial streets in both north and south Gardena should be designed to accommodate the added stress of truck movements and the extra parking width needed by larger vehicles.

LIFESTYLE CHANGES

Factors such as significantly higher transit or bicycle usage and gasoline shortages all would have considerable impacts on future circulation requirements within Gardena. This circulation element is intended to be conservative and present conditions under the worst possible case. Should future lifestyle changes occur, the recommended rights-of-way as discussed in this element should have the flexibility to accommodate more bicycle routes and improved transit operations if a corresponding decrease in motor vehicle traffic occurs or is desired.

MISCELLANEOUS FUTURE OCCURRENCES

Examination of other studies for the area revealed that very little is being proposed in present SCAG or SCRTD short- and long-range plans which will directly affect Gardena. A park-ride lot has been proposed by SCAG for the Ascot Park Area. If implemented, this might lure some of Gardenals commuters to downtown Los Angeles out of their cars into buses. It should not, however, significantly affect Gardena's traffic.

If the Gardena Municipal Bus Company were to improve or expand its bus service, mobility for Gardena's transit-dependents (those who, for any reason, cannot drive and must have inexpensive alternative transportation) would be improved. In addition to providing improved mobility to transit-dependents, better and more frequent bus service would likely draw some non-transit-dependent riders and thus lower automobile travel in Gardena.

BICYCLE AND PEDESTRIAN NEEDS

A major concern to Gardena residents is the provision of safe bicycle and pedestrian ways within Gardena. In order to determine the specific needs of these two highly related groups, it is first

necessary to determine what locations in and around Gardena are "generating" bicycle and/or pedestrian trips. These "generators" were assumed to fall into a four categories (see Figure 8):

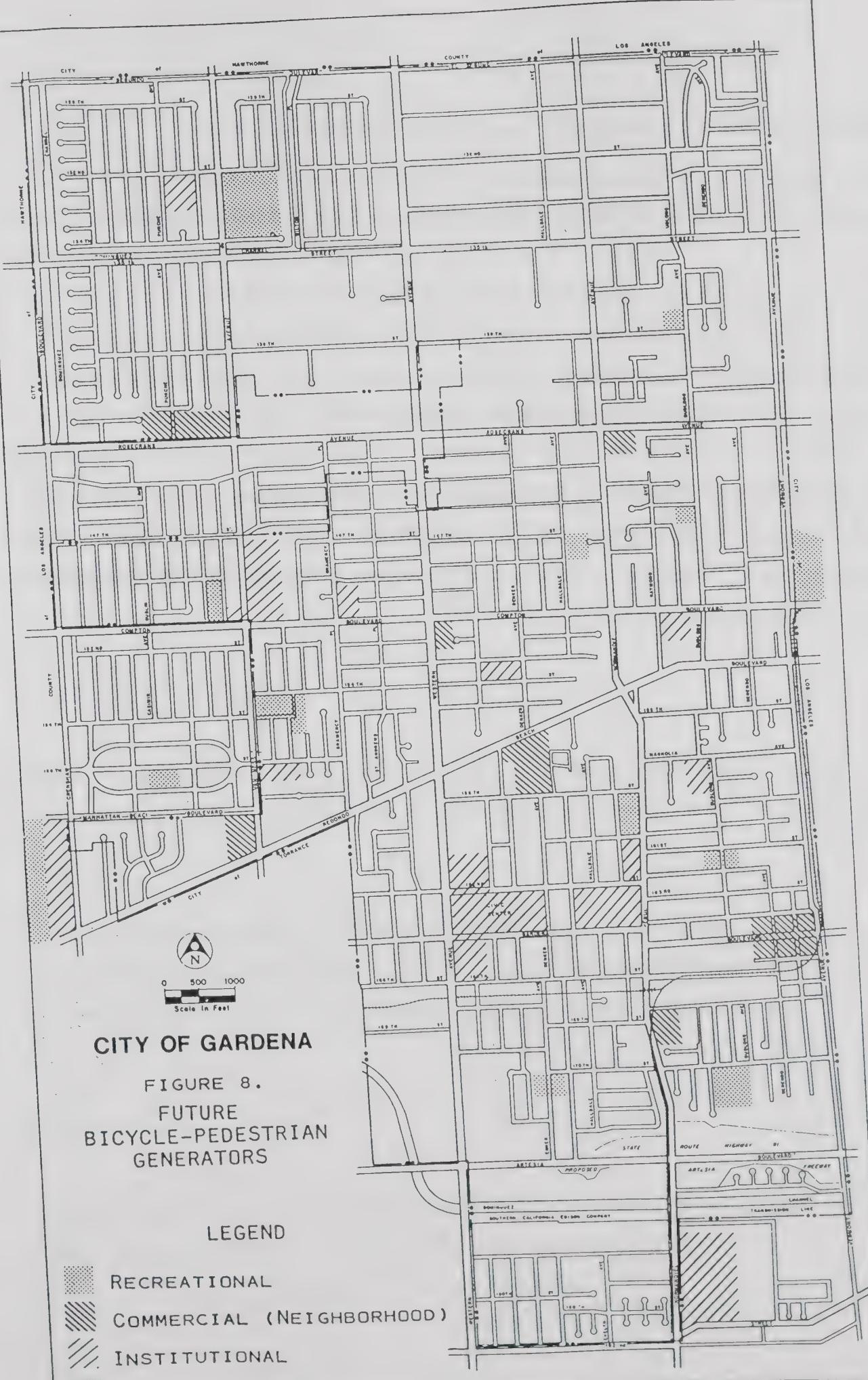
- Residential
- Commercial (neighborhood, not highway type)
- Institutional (schools, community centers, libraries, etc.)
- Recreational (parks, scenic routes, etc.)

Since residential pockets cover much of the City, only the last three generators were plotted to obtain their locations with respect to the residential areas which they serve.

Bicycle corridors were developed by finding logical major corridor routes to these generators. A recent survey(3) of bicycle riders in nearby Torrance indicated that bicycle riders (1) want to ride arterials; (2) want to go to the beach; (3) would ride bicycles more if routes were provided; (4) are not willing to take circuitous routes; and (5) are deterred by traffic, theft, and lack of storage.

Unfortunately, the third and fifth points are contradictory in most cases where arterials are concerned. A solution to this problem is to provide separated guideways for cyclists along arterials. Simple bikeway signing on streets with high volumes is not adequate to ensure the safety of the cyclist and would provide him or her with a false sense of security. These guideways may consist of a stripe or asphalt berm or even a median strip on each side of the street. A system of bicycle corridors is outlined in Chapter V.

Unlike cyclists, pedestrians presently have several signals and crosswalks designed to assist them with their cross-street movements. Although observations revealed a few of these pedestrian crossings to be in need of improvement, the major future problem for pedestrians in Gardena appears to be the lack of sidewalks in many areas, particularly in the northern part of the City. Sidewalks should be provided along all streets in Gardena.



CITY OF GARDENA

FIGURE 8.

FUTURE

BICYCLE-PEDESTRIAN

GENERATORS

LEGEND

RECREATIONAL

COMMERCIAL (NEIGHBORHOOD)

INSTITUTIONAL

OPPORTUNITIES

Future opportunities for traffic in Gardena lie not with grand new schemes of freeways, but mainly with taking maximum advantage of existing streets within existing rights-of-way.

For bicycle circulation, the Dominguez Channel provides opportunity for an exclusive bike route to serve South Gardena in addition to having some regional potential as pointed out in a recent Los Angeles County bikeways study. Public and political values on priorities--parking versus bikeways, will also figure highly into the potential for future bicycle routes.

The development of pedestrian circulation opportunities will depend greatly upon whether local pressure dictates a high priority in this area. An ordinance requiring sidewalks along all streets could be passed. Pedestrian amenities such as benches and landscaping could be encouraged in community commercial areas of Gardena.

IV. RECOMMENDED CIRCULATION POLICIES

This chapter details policies which should be adopted by the City of Gardena to improve circulation and provide a safer environment for all modes of transportation.

ARTERIALS

According to "Traffic Circulation Planning for Communities, 5 optimum arterial spacing is approximately a one square-mile grid. It is recommended that Gardena adopt spacing of arterials similar to that shown in Chapter V. It is also recommended that arterials be divided, wherever possible, by raised landscaped medians for safety and aesthetic reasons. Arterials should have a minimum 100 feet of right-of-way.

COLLECTORS AND LOCALS

Gardena's present system of defining Major Collectors, Commercial Industrial Collectors, and Residential Collectors is adequate for defining future needs. We recommend that this terminology be continued.

It is further recommended that a minimum of 60 feet of right-of-way be provided for all Commercial-Industrial and Residential Collectors. Major Collectors should have an 80-foot, minimum right-of-way. Residential locals should have a minimum 54-foot right-of-way.

PARKING

"Parking along major collector streets should be discouraged at least in the peak hours."; thus deleting reference to time so that each street may be assessed individually.

Parking along major collector streets should be discouraged at least in the peak hours. On some of the high-volume Major Collectors (such as Normandie south of Redondo Beach Boulevard), it may be desirable to prohibit parking on both sides of the street to the south City Limits at 182nd Street.

"Local streets, Commercial-Industrial collectors and Residential collectors should not have peak-hour parking restrictions; etc."; thus adding reference to Commercial-Industrial Collector.

Off-street parking should be monitored citywide, and existing establishments along arterials, major collectors, and Industrial-Commercial Collectors should have sufficient off-street parking (if space is available) for their businesses. In commercial or industrial areas, if on-street parking is needed, it should be parallel parking instead of angle parking. Angle parking on main thoroughfares creates congestion and is generally less safe than parallel parking.

BIKEWAYS

As discussed previously, this circulation element will show potential corridors for bicycle routes. In developing policies concerning bicycle routes, the City should not erect "bicycle route" signs without providing some method of separating bicycle traffic from vehicular traffic. It is further recommended that the bicycle routes and the method of traffic separation be phased in by utilizing the least expensive method (striping of bicycle lanes) in existing rights-of-way to first test potential use before going to expensive widening or asphalt berm separations. Safe and well-lighted bicycle storage facilities should be provided at community shopping centers, schools, and parks whenever possible.

PEDESTRIAN

It is recommended that the City adopt a policy to require sidewalks at least along all arterials and collectors and preferably along all streets within Gardena.

TRANSIT

It is necessary that transit (buses) be accommodated well within the proposed circulation system. Future bus bays for major bus stops, the potential for programming "bus priority" at signals and future potential of demand-responsive bus service for certain segments of the Gardena population are all areas where future improvements in bus circulation might occur. Circulation mode priorities should be made on a political level. If, based upon local concerns, a political decision is made to "encourage" bus use, then a specific program for designing and implementing bus improvements should be developed.

TRUCKS

Good truck circulation is of primary economic importance to Gardena. Nonetheless, the circulation system should be designed to keep trucks out of residential areas. Truck travel has an impact upon the design and capacity of any street where such travel is significant. If the recommended circulation element is properly implemented, even without specific truck routes, trucks will be inclined to stay on the arterials, major collectors, and Commercial-Industrial Collectors. Concurrently, because of parking, narrow streets, and the like, trucks will be discouraged from using residential collectors and local streets for through travel.

RAIL CROSSINGS

Railroad grade crossing safety devices are installed along all the grade crossings, within the City of Gardena. In the future, should daily railroad usage increase significantly, it should be City policy that engineering studies of the railroad crossings be made to determine whether additional control devices, or even a grade separation, are warranted.

V. RECOMMENDED CIRCULATION PLAN

In development of a circulation plan for Gardena, the existing issues, future problems, land perceived needs were all considered important inputs. In addition, flexibility is the key to a successful circulation plan. The recommended system is believed to have the flexibility to accommodate foreseeable land use changes within the City. Figure 9 illustrates the recommended circulation system for Gardena. Table 1 lists the recommended minimum standards for the various circulation components.

ARTERIALS

The following streets are recommended as designated arterials having left-turn pockets at intersection approaches:

- El Segundo Boulevard
- Rosecrans Avenue
- Redondo Beach Boulevard
- Artesia Boulevard
- Crenshaw Boulevard
- Western Avenue
- Vermont Avenue

MAJOR COLLECTORS

The following streets are recommended to be at least four-lane Major Collectors with left-turn pockets at intersection approaches:

- Van Ness Avenue
- Normandie Avenue
- 135th Street
- Compton Boulevard from Crenshaw to Normandie
- Manhattan Boulevard
- 182nd Street

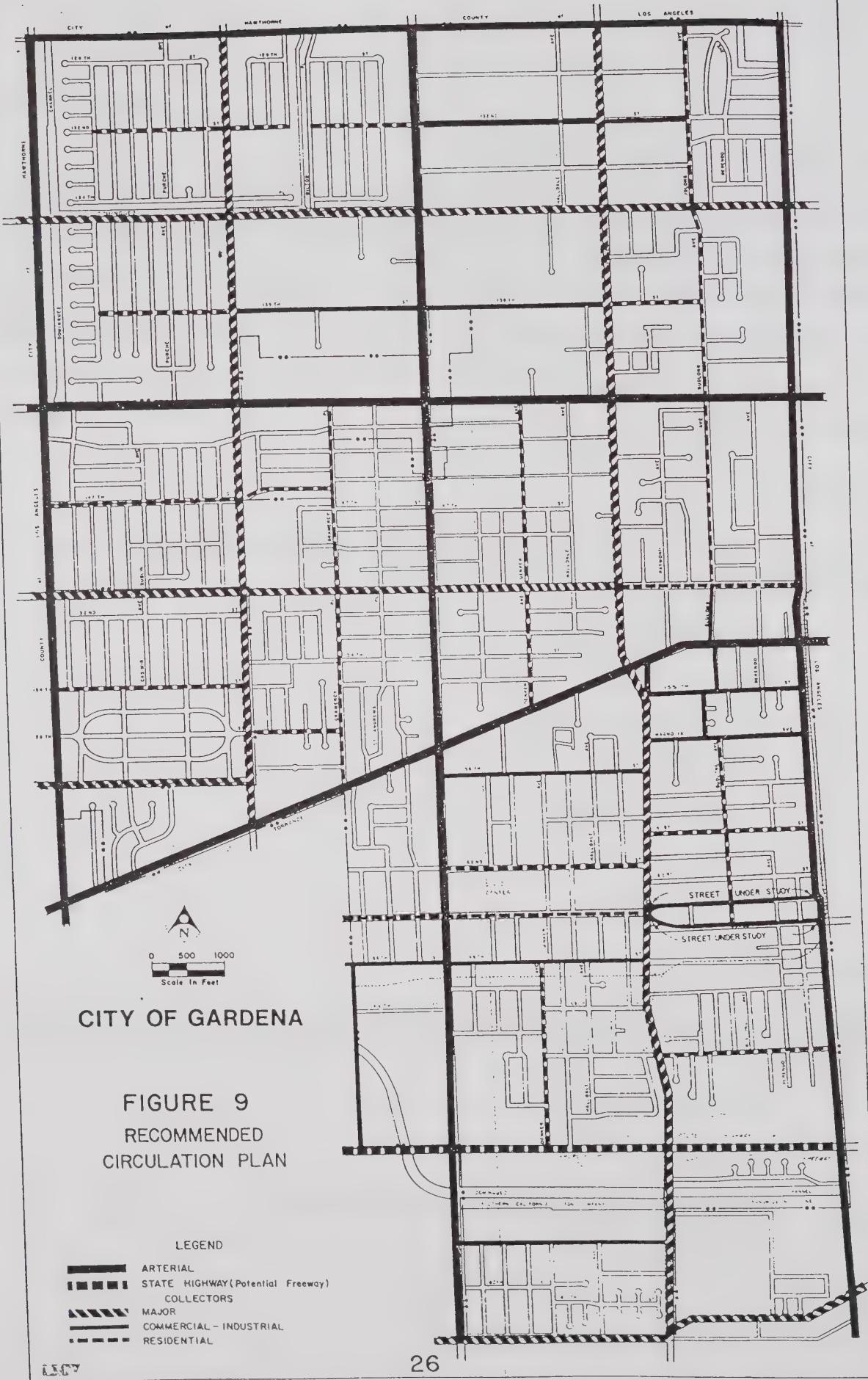


FIGURE 9
RECOMMENDED
CIRCULATION PLAN

LEGEND

-  ARTERIAL
 STATE HIGHWAY (Potential Freeway)
 COLLECTORS
 MAJOR
 COMMERCIAL - INDUSTRIAL
 RESIDENTIAL

TABLE 1. RECOMMENDED STANDARDS

Functional Classification	No. Traffic Lanes	Width of Traffic Lanes ⁽¹⁾	Approx. Max. ADT	Median Width	Shoulder (Parking) Width ⁽²⁾	Bike Lane(s) ⁽³⁾	Min. – Max. Curb to Curb	Minimum Advisable Row ⁽⁷⁾
Arterial	4-6	48'-74'	25-47,000	10-14 ⁽¹⁾	8'-10'	8'-12'	64'-120' ⁽⁴⁾	100
Major Collector	4	44'-48'	18-25,000	0-4'	8'-10'	8'-10'	52'-78' ⁽⁴⁾	80
Commercial-Industrial Collector	2	24'-26'	5,000	0	8'-10'	8'-10'	38'-56 ⁽⁵⁾	60
Residential Collector	2	22'-24'	5,000	0	8'	8'-10'	36' - 50' ⁽⁵⁾	60
Local	2	20'-22'	1,400	0	6'-8'	8'-10'	32' - 36' ⁽⁶⁾	54

NOTES: (1) Median can be painted or physical landscaped structure; painted median can be two-way left turn lane in commercial or industrial areas. Minimum acceptable lane width is 11 feet.

(2) Parking is assumed to be parallel on both sides. Angle parking requires greater width and is generally undesirable, from a safety standpoint, for on-street parking. Parking can be eliminated or restricted in many cases to increase capacity or improve traffic flow.

(3) Bikeways to be applied as needed.

(4) Minimum assumes no parking or bikeways; maximum assumes bikeways.

(5) Minimum assumes parking; maximum adds bikeways.

(6) Minimum assumes parking.

(7) ROW includes 5 feet for sidewalks on both sides and 3 feet for utilities on both sides.

COMMERCIAL-INDUSTRIAL COLLECTORS

Commercial-Industrial Collectors are recommended to be two-lane streets. The following streets fall into this category:

- 155 St. from Van Buren Ave. to Normandie Way.
- 132nd Street from Western to Budlong
- 139th Street from Van Ness to Normandie
- Budlong Avenue from Compton Boulevard to 155th Street
- 155th Street from Normandie Av. to Vermont
- Van Buren Street from 155th to Magnolia
- Magnolia Avenue from Normandie to Vermont
- 166th Street from the west City Limits to Normandie
- Gardena Boulevard from Normandie to Vermont (Street under study)
- 178 Street from Western to Normandie
- 158th Street from Western to Normandie
- Gramercy Place from 166th Street to Artesia
- Normandie Way from 155th Street to Redondo Beach Boulevard
- 164th Street from Normandie to Vermont (Street under study)

RESIDENTIAL COLLECTORS

These streets are also recommended to be two lanes, with room for parking on each side:

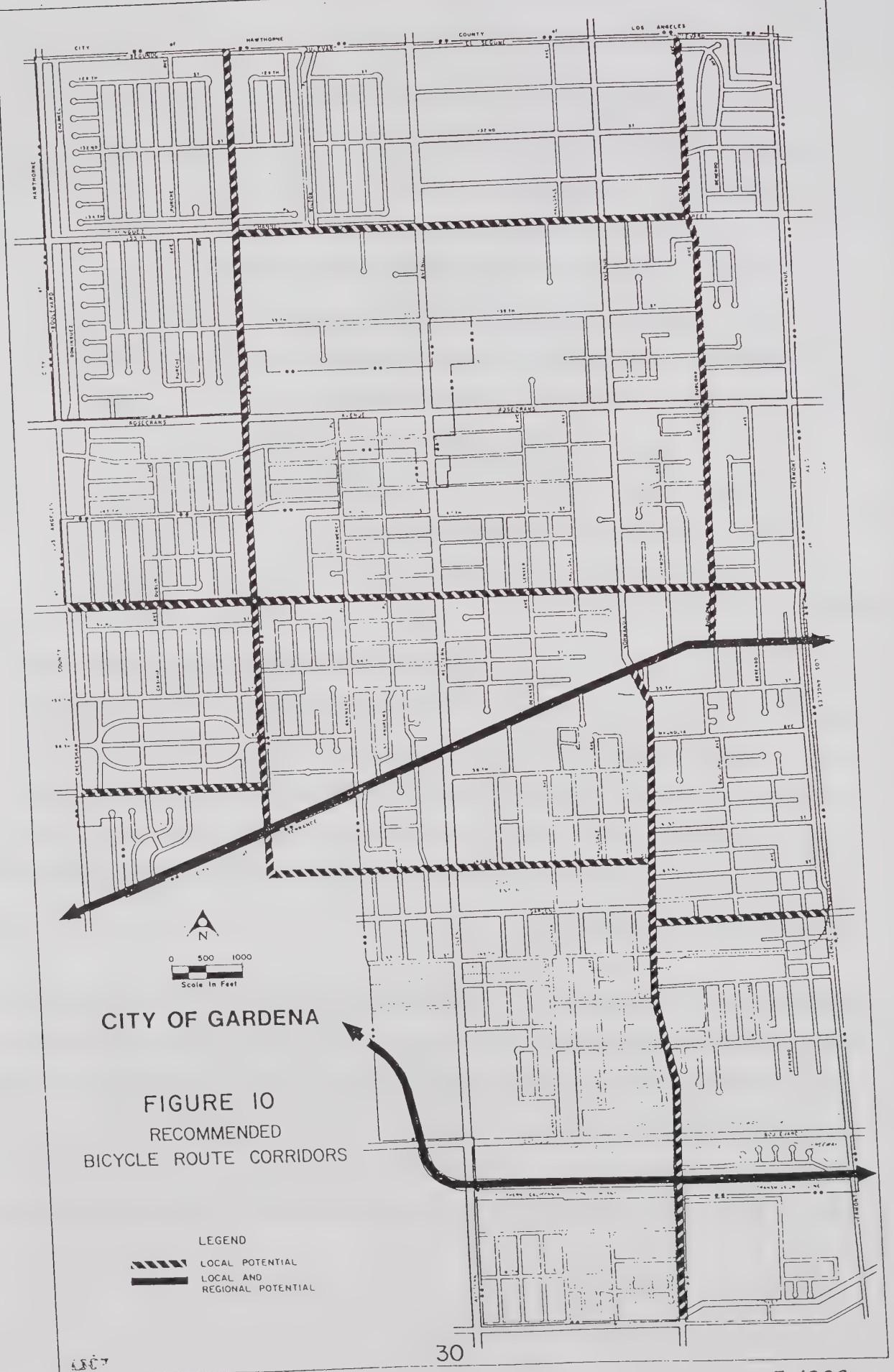
- 132nd Street (two sections) from Ardash to Western
- 139th Street from Ardash to Van Ness
- 146th Place from Van Ness to Gramercy
- 147th Street from Crenshaw to Van Ness
- 154th Street from Crenshaw to Van Ness
- 156th Street from Van Ness to Gramercy

- 161st Street from Norrnandie to Vermont
- 162nd Street from Western to Normandie
- Gardena Boulevard from the west City Limits to Normandie
- 170th Street from Normandie to Vermont
- Gramercy Place from Rosecrans to Redondo Beach Boulevard
- 139th Street from Normandie to Budlong
- Compton Boulevard from Normandie to Vermont
- Budlong Avenue from El Segundo to Compton
- Budlong Avenue from Magnolia to Gardena Boulevard
- Denker Avenue from Rosecrans to Redondo Beach Boulevard
- Denker Avenue from 166th Street to Artesia

BICYCLE USE CORRIDORS

Based upon the location of bicycle "generators" and the adjacent location of arterials and collectors in Gardena, a plan for potential bicycle routes was developed. It is emphasized that this plan is preliminary, and that the exact location and type of facilities required should be determined by future study. As pointed out in the policy section, it is recommended that "bike route" signs not be placed along any of these corridors without some method of separating bicycle traffic from vehicular traffic either by striping or providing an asphalt berm. Figure 10 illustrates the potential bicycle route corridors in Gardena.

As can be seen from the figure, bikeway potential of both regional and local scope exists along the Dominguez Channel and Redondo Beach Boulevard. It is possible, for instance, for a bike route to be provided along Redondo Beach Boulevard with the proposed 84-foot widening. The lane configuration would have to be three 11 -foot lanes in each direction plus a 10-foot two-way left-turn lane and a 4-foot bike lane on each side of the street. Parking would have to be prohibited, however, and a difficult political decision would need to be made concerning priorities along



Redondo Beach Boulevard. This is not a recommendation for a bicycle lane along Redondo Beach Boulevard, but an alternative course of action should there be a decision favoring such a bicycle route.

GENERAL RECOMMENDATIONS

After an examination of all data concerning existing and future problems in circulation, several general recommendations can be made:

- On-site examination of peak-hour problems in Gardena revealed that low capital improvements might be made at many intersections. Specifically, peak-hour turning movement counts should be made at all capacity deficient locations shown in Figure 6 to determine the best traffic engineering solutions to these problems. Such solutions as signalization improvements, dual left-turn lanes, signalized reversible lanes, and improved channelization techniques appear to be more reasonable for solving Gardenas major capacity problems than extensive future widenings.
- With regard to signalization, there are several signals in Gardena where signal warrants (or requirements) are questionable. These low-volume locations should be re-examined periodically to determine whether the signals should be removed. Previous studies have shown that unwarranted signals result in excessive delays to mainstream traffic and, in many cases, are safety hazards. In addition, the potential for improving signals and signal progressions through improved interconnections should be explored--particularly along the arterials and major collectors within Gardena. Several fixed-time signals and semiactivated signals appear likely candidates for future upgrading.
- Another area of potential improvement is signal spacing. Signals generally should be spaced at minimum quarter-mile intervals to provide good flow progression in both directions on urban area grid systems such as that in Gardena.

- Of course, due to special traffic generators or other problems, quarter-mile spacing cannot always be provided; however, it should be strived for in most cases. The distribution of signals along the recommended circulation system should reinforce this goal.
- Pedestrian and bicycle circulation can be significantly improved by designing signals in the vicinity of pedestrian-bicycle generators to accommodate both pedestrians and bicycles. Curbside pushbuttons could be provided at major intersections for bicycle riders but should be designed so that an actuation would not preempt smooth vehicular traffic flow.
- Speed limits are also important in providing smooth circulation. Those within the City of Gardena appear to be adequate and should be continued until future conditions warrant adjustments.

CONCLUSIONS

If immediate problems are of primary importance to Gardena residents, then in terms of priorities it is recommended that the less urgent circulation element changes be implemented in conjunction with phased land use changes. Long-term solutions for urgent areas of concern (such as the Redondo Beach Boulevard and Gardena Boulevard corridors) should be addressed. It is in the best interests of all Gardena residents to resolve these issues as quickly as possible.

VI. SCENIC HIGHWAYS

Government Code, Section 65302(h) requires a scenic highways element of all city and county general plans. The scenic highways element shall be developed pursuant to the provisions of Article 2.5, Chapter 2, Division I of the Streets and Highways Code.

The City of Gardena does not have any traffic thoroughfares eligible or designated in the Streets and Highways Code, Section 263. Furthermore, due to the physical features of the local streets, highways, and surrounding city scapes and landscapes, no potential exists within the foreseeable future for satisfying the criteria necessary for scenic highways.

Local scenic routes are not feasible due to the existing physical nature of Gardena. Other general plan elements, particularly the Land Use Element, do not propose any major physical changes that could provide the necessary criteria in the future for a scenic highway (through 1990).

Strip commercial uses dominate, and will continue to dominate, all of the City's main traffic arterials. No unique topographic or architectural formations exist along any traffic arterials, and none can be anticipated.

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ENVIRONMENTAL IMPACT REPORT

CIRCULATION AND SCENIC HIGHWAY ELEMENT
OF THE GENERAL PLAN

City of Gardena
Department of Public Works
Engineering Division

November, 1974

1. DESCRIPTION OF THE PROJECT

The project consists of the preparation and adoption of a circulation and scenic highway element of the General Plan. The proposed element is attached for the consideration of the members of the Environmental Impact Review Board. Figure 9 of the report gives a detailed map of the project limits with precise location and boundaries indicated. Figure 2 of the report gives a Regional Map which indicates the regional environmental setting.

The project report proposes, subject to consideration and confirmation by the City Council and Planning Commission, certain circulation policies. It undertakes the designation of Arterial and Major Collector Streets, with previous policies being predominantly confirmed. However, to define future needs it designates certain additional streets as Residential Collectors and Commercial Industrial Collectors.

The report proposes the development of recommended standards for each type of street. It also designates bicycle corridors for possible development of bicycle separated lanes. General recommendations for low-cost capital improvement projects, signal spacing, and special considerations for pedestrians are also given. Various other modes of transportation are discussed with no explicit recommendations being made. A statement is included indicating the absence of scenic highways.

In Appendix A of the report specific proposals for two long-standing problems in Gardena were made, and while they differ in level of specificity from the circulation element as a whole, they must be considered on the level of specificity to which they are written.

The first proposal concerns Gardena Blvd. from Vermont Ave. to Normandie Ave. which has an undesirable offset in the alignment from Gardena Blvd. west of Normandie

Ave. of some 2001, which causes poor intersection geometry. The solution proposed in Appendix A was the establishment of a one-way street pair between Normandie Ave. and Vermont Ave. consisting of 164 St. westbound and Gardena Blvd. eastbound.

This would necessitate a geometric redesign of the whole 164 St., Normandie Ave., and Gardena Blvd. complex, with necessary right-of-way acquisition.

The second proposal concerns the 155 St. at Normandie Ave. intersection. The report recommends a traffic diverter by turning 155th Street northward along Normandie Way effectively eliminating any requirement for signalization of the 155 St. at Normandie Ave. intersection. It also proposes to allow only right turn access into and out of Normandie Way from Redondo Beach Blvd.

II. DESCRIPTION OF THE ENVIRONMENTAL SETTING

The local environmental setting of this project is the City of Gardena., a highly urbanized community consisting predominantly of residential with light industrial and commercial areas. The physical setting of the City is on a flat flood plain within the southwesterly section of the Los Angeles basin. It is bounded by the Cities of Torrance, Los Angeles, Hawthorne, and urbanized unincorporated county areas. Outside of its people it has no rare or unique resources. This project should affect no wildlife, indigenous flora, historical, or archeological sites.

III. GENERAL

A. Environmental Impacts and Mitigations

In the following sections the general provisions of the circulation and scenic highway element are considered. The positive impacts of the proposed circulation element are:

- a) Improved accessibility to various areas of the City.
- b) Improved safety.
- c) Establishment of an integrated plan of action which will set the final growth pattern of the City.
- d) Reduced accident rates.
- e) Reduced congestion.

If adopted the plan may foster some new economic development and if so, increase revenue to the City. The plan should have no appreciable effect on population change or on the human use of the resource base of the community or region.

The adverse impacts' of the proposed circulation element are:

- a) Lack of specific provision in standards for aesthetic treatments of streets although it is generally recommended.
- b) The potential requirement that acquisition of additional right of-way will be required for implementation of the plan.

Both of these impacts are long-term in their effects, but local in their scope, and both are unavoidable if the proposal is implemented as it stands. No mitigation measures are written into the plan to minimize the impacts.

B. Alternatives to the Proposed Action

The following alternatives to adoption of the proposed element have been considered:

1. Standardize the existing City Code as the circulation element. This is in effect the "no project" alternative required by the State guidelines.
2. Keep the plan essentially as is, but add provisions for aesthetic treatments.
3. Eliminate entirely or in part those redesignations which potentially require additional rights-of-way.

The first alternative was rejected in favor of a new circulation element because the existing code is somewhat outmoded and doesn't reflect changes that have occurred since its adoption either in lifestyle or the City's interpretation of the desires of its citizens.

The second alternative was not included because it was felt that it was not properly included in a traffic circulation element.

It should be noted that if the City Council desires fully landscaped medians, existing 100' foot arterial rights-of-way will not be adequate. It should be noted also that the City presently requires parkway trees and customarily landscapes median where they are of adequate width and are previously established.

The third alternative would have impact primarily on the following streets:

- | | | | |
|----|----------------|---|--|
| 1. | 156 Street | - | Van Ness Avenue to Gramercy Place. |
| 2. | Denker Avenue | - | Rosecrans Avenue to Compton Boulevard
and 166 Street to Artesia Boulevard |
| 3. | Gramercy Place | - | 156 Street to Redondo Beach Blvd. |
| 4. | 178 Street | - | Normandie Avenue to Western Avenue |

The widening on these streets would be from 54' right-of-way to 60' right-of-way and should not have an extensive adverse effect such as relocation of people. The proposed alternative was adopted to give a consistent network of collectors.

C. Cumulative and Long-Term Effects

The cumulative and long-term adverse effects of the proposal are few if the City adopts a policy of encouraging additional medians with landscaping. The alternative of waiting is not really tenable since a circulation and scenic highway element must be adopted by State Law and since the thrust of the proposed circulation element was to seek optimization of beneficial uses of existing conditions.

D. Irreversible Environmental Change and Growth Inducing Impacts

The acquisition of rights-of-way would be an irreversible environmental change but it would be a minor one affecting only a small area of the City, while the beneficial effects for the whole City would outweigh the negative effects. A minor growth inducing effect might occur due to increased accessibility but undoubtedly not as significantly as other operative factors such as ethnic shifts and general aging and deterioration of the City districts.

IV. GARDENA BOULEVARD PROPOSAL IN APPENDIX A

A. Environmental Impacts

The following positive impacts of the specific proposal in Appendix A of the report were noted. The proposed realignment should:

1. Provide higher capacity at the intersection of Gardena Boulevard and Normandie Avenue.
2. Reduce accidents.
3. Improve traffic flow and circulation.
4. Possibly help revitalize the older downtown area of Gardena.
5. Eliminate hazards of angle parking on a two-way street.

B. Adverse Environmental Impacts

The following adverse impacts were noted. The project will:

1. Require additional right-of-way.
2. Reduce the direct access to the business area.
3. Modify bus routes.
4. Realign Gardena Boulevard and 164th Street at Normandie Avenue.

C. Mitigation Measures

No mitigation measures were proposed in the report.

D. Alternatives

The following alternatives to the proposed action have been considered.

1. No project.
2. Realign Gardena Boulevard westerly of Normandie Avenue and allow two-way traffic to remain.

The alternative of no project seems undesirable because it continues a longstanding problem. The alternative of a westerly realignment seems to have the effect of providing more direct access to the downtown area, at possibly a lower cost, and without developing problems at the 164 Street., Gardena Boulevard and Vermont Avenue, complex, but does not solve the problem of angle parking on a two-way street.

E. Cumulative and Long-Term Effects and Irreversible Environmental Changes or Growth Inducing Impacts of the Proposal

The proposal would have an irreversible effect by reducing direct access to the downtown business area. It does not appear substantiated that this proposed one-way pair will reverse the slow economic deterioration of the downtown Gardena area, all other factors being equal. The project does not appear to have a significant growth inducing impact. The project commits the City to no irreversible use of its resource base.

V. THE 155 STREET AT NORMANDIE AVENUE PROPOSAL IN APPENDIX A

A. Environmental Impacts

The following positive impacts of the proposal were noted:

1. Alleviation of close signal spacing on Normandie Ave.
2. Reduction of congestion.
3. Increase in the ability of Normandie Ave. to handle its traffic flow.
4. Allowance for better coordination of signals along Normandie Ave.

B. Adverse Environmental Impacts

The following were noted as adverse environmental impacts:

1. Direct access to the shopping center and to the Community Hospital on 155 St. will be eliminated from Normandie Ave.
2. Right-of-way acquisition or traffic control measures may be required to attain the required alignment if a proper turning radius with adequate sight distance is to be attained at the northeast corner of Normandie Way and 155 St.

C. Mitigation Measures

No mitigation measures have been advanced by this proposal.

D. Alternatives

The following alternatives to the project were considered:

1. No project.
2. Install an interconnected signal at 155 St. and Normandie Way, coordinates with Redondo Beach Blvd. at Normandie Ave.
3. Make Normandie Way a one-way street southbound and install a signal at Normandie Ave. and 155 St.

The alternative of no project seems undesirable because it continues a longstanding traffic problem. The last two proposals were previously made by the Engineering Division and deferred by political decision.

E. Cumulative and Long-Term Effects and Irreversible Environmental Changes or Growth Inducing Impact of the Proposed Actions.

The effects of the proposal would be reversible since the realignment proposed could easily, although at some cost, be converted back to its present state or to an alternate proposal.

VI. ORGANIZATIONS AND PERSONS CONSULTED

The following persons were consulted in preparing this Environmental Impact Report:

1. Frank Gutierrez, Public Works Director, City of Gardena
2. Russell Maguire, Assistant City Engineer, City of Gardena
3. David Plechas, Civil Engineering Associate, City of Gardena (Traffic)

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CITY OF GARDENA

OPEN SPACE & RECREATION ELEMENT

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ADOPTED:

SEPTEMBER 25, 1973

RESOLUTION NO. 2937

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OPEN SPACE AND RECREATION ELEMENT

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OPEN SPACE AND RECREATION ELEMENTS

INTRODUCTION

A. General

The character of Gardena makes this element meaningful only if recreational open space is given prime consideration since "open space" as defined by Section 65563, Government Code, exists for Gardena only in a recreation format. It is appropriate, therefore, to include recreation as a co-element of open space for our particular community.

The City shall investigate the following areas of study:

1. A review of the current open space land and recreation facilities.
2. Acquire citizens' opinions, views, and ideas to formulate open space and recreation goals and policies.
3. A comprehensive analysis and selection of a set of standards and criteria for Open space, parks, and recreation.
4. Determination of needs and deficiencies of open space and recreation land based upon the criteria and standards adopted.
5. A study of alternative solutions which will develop a meaningful open space and park system and fulfill the present and future needs and demands of the community.
6. Action programs which accomplish the implementation of the goals and policies, and serve as a means of unifying decision making in the management of open space and recreation.

B. Relation to the Urban Environment

The following section presents the interrelationship between open space and other features found in the urban environment. It is not an unjust supposition, that open space has a positive effect on an urban community.

1. Open Space in Relation to Urban Development - Once a community has been "built up," creating new open spaces becomes more difficult in terms of cost, time, and in many cases, citizen support. Contemporary planning philosophy acknowledges the

value of open space to urban environments as evidenced in all new quality developments. For Gardena, only two alternatives exist to provide major amounts of new open space: (a) to expand open space through demolition/redevelopment, and (b) to place more stringent setback and open space requirements on new property development. The latter method would not provide large open spaces but would create visual relief areas and smaller areas for limited recreational purposes. Increase in population density would be curtailed with additional open space, as is a goal of Gardena.

2. Sociological Implications - Due to technology, which has increased man's available leisure time, a need for additional recreational space is essential. But machines and modern materials such as concrete, steel, plastics, etc. often create an environmentally unpleasing atmosphere. We are surrounded by noise and building facades to the extent that open space and greenery provide needed visual and recreational relief. In addition, society's options for the greatest use of the land is kept open so long as it remains vacant.
3. Public Safety - Gardena is located immediately south of the Newport-Inglewood fault zone. Recent history has proved this to be an active fault along with others close enough in proximity to cause damage from moderate earthquakes with epicenters over 50 miles from the City. Seismic safety in detailed format is provided in the seismic safety element of the General Plan. Obviously, open space cannot suffer structural damage unless the magnitude of a quake is severe, and soil collapse extensive.

In addition to possible earthquake damage, there is a lesser possibility of flood damage from excessive rains. This topic is detailed in the conservation element, but the simple fact that Gardena is located on a flood plain subject to water run-off from adjoining areas of higher elevation indicates a potential problem.

4. Historical Preservation – Gardena's heritage dates back to the Don Dominguez Family and their Spanish land grant to the Gardena Valley. In the late 1800's, Gardena began to flourish as an agricultural center due to centuries of soil wash and extensive underground water supplies. The agrarian past lingers on with 25 plant nurseries, though the strawberry farms for which the area was famous have disappeared. The rural atmosphere can best be preserved through extensive plant life and open space. The cultural and historical factors are detailed in the conservation element.
5. Economics - The well-being of the general public is directly related to the existence of open space and recreational land. As areas become more urbanized, land values increase

so that open space becomes somewhat of an economic burden to maintain. This is greatly outweighed by the increased quality of the environment which will ultimately be reflected in greater land values for properties in close proximity to open space land, and to a lesser degree in the community as a whole.

DEFINITIONS

Open Space - General

Open space can be defined as any parcel or area of land or water which is essentially unimproved and devoted to an open space use as defined below.

1. Open space for the preservation of natural resources ... (See Conservation Element).
2. Open space used for the managed production of resources ... agricultural lands, major mineral deposits
3. Open space for the public health and safety areas which require special management or regulation because of hazardous or special conditions
4. Open space for outdoor recreation ...¹

Recreation Open Space

Recreational open space may include, but is not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited to park and recreation purposes; and areas which serve as links between major recreation and open space reservations, including utility easements, trails, railroad rightof-way, and scenic highway corridors.

GOALS AND POLICIES

I. CITIZEN RECOMMENDATIONS¹

The goals and policies outlined in this element are based upon the Public Facilities Subcommittee's recommendation with respect to the development of open space and recreation in the City.

A. Goals

1. Need for several parks over twenty acres.
2. Sites should be secured for small neighborhood parks, and should be located so that children need not cross major thoroughfares.
3. Facilities should be developed for all age groups at each park site.
4. Planned parksite on Artesia Boulevard and Vermont Avenue should include picnic areas, barbecue pits, various ball fields (soccer, baseball, lawn bowling) and well lighted basketball and tennis courts. In addition, the proposed park site should be provided with an outdoor stage, a lake, a children's play area, and a multipurpose recreation building.
5. Information concerning all programs offered by Recreation and Park Department could be improved.
6. Small community centers with facilities for all age groups at each park preferred to one large facility at Civic Center,
7. Stabilize population density. (Gone On Arrival Unable to Locate)

B. Policies

1. Recognize established standards and criteria required to fulfill the community needs.
 2. Develop the City-owned property (Council wishes to sell or trade) at 162nd Street and Normandie into parkette or related use.
 3. Develop the Vermont median strip and the railroad track into greenbelt.
- 1 Developmental Goals for Gardena. The Citizens Committee for Zoning Revision, City of Gardena, California, 1971, pp. 66, 67.

4. Coordinate with the Southern California Edison Company, the Los Angeles Department of Water and Power, and the County Flood Control District for the use of utility rights-of-way for recreation and open space purposes. Such uses will be by virtue of a grant of a license.
5. The zoning ordinance should be amended to require more landscaping, and other aesthetic features to be provided for each development.
6. Industrial development should have recreational facilities or open space available for their employees.
7. The possibility of applying a construction tax in the form of a fee or a dedication of land for public use should be explored.
8. Encourage private owners and public agencies to sell, donate, or lease, for nominal fees, surplus lands which are suitable for open space uses.
9. Create a reasonable balance of City expenditures which considers open space and recreation needs of the community.
10. Coordinate planning efforts with adjacent Cities, County, and the Southern California Association of Governments in developing a local and regional open space system.

II OPEN SPACE DEVELOPMENT

Land or water that is not developed for urban uses is usually considered to be "open space." "Open space," however, should not necessarily be protected unless it serves some desirable purpose or function. It is true that virtually all "open space" has some value to society -- it is more aesthetically pleasing than an urbanized landscape; it provides a welcome relief from, and contrast to, urbanized areas; it helps relieve feelings of crowding; and it keeps society's options open as to optimal land use patterns.

Therefore, whenever open space is converted to urban uses, society pays a price. With this in mind, the following goals and policies are additionally recommended:

- A. Analyze all major and secondary streets to determine feasibility of developing median strips (greenbelts). Coordinate this effort with the City Engineering Department and include as part of the circulation element of the General Plan.
- B. Determine precise recreation deficiencies in neighborhood areas establishing priorities based on need, and feasibility of eliminating these deficiencies.

- C. Establish open lines of communication with Federal and State agencies to coordinate resources, both financial and informational.
- D. Study the feasibility of modifying zoning ordinances to require more open space and landscaping, greater building setbacks, and provide favorable consideration to developments with impressive aesthetic features.

INVENTORY OF EXISTING OPEN SPACE LAND AND RECREATIONAL FACILITIES

Open space land in Gardena is classified into two categories: (1) public and (2) private open space. The size of existing parks, recreational facilities, and both public and private open space is given in Table I. In addition, the location of such areas is shown in Maps I, II, III, and IV.

A. Current Status of Recreational Facilities

1. Rowley Park - Recreation building, picnic shelters, children's play area, gymnastics equipment, athletic field basketball courts, handball court, tennis courts, horseshoe pits, roller skating facility and wading pool.
2. Bell Park - Recreation building, picnic shelters, children's play area, athletic field, handball court, multipurpose court, horseshoe pit and wading pool.
3. Thornburg Park - Recreation building, picnic shelters, children's play area, gymnastics equipment, athletic field, basketball courts, handball courts, horseshoe pits, and swing set.
4. Freeman Park - Recreation building, picnic area, children's play area, gymnastics equipment, athletic field, basketball courts, handball court, and horseshoe pits.
5. Recreation Park - Recreation building, picnic shelter area, children's play area, gymnasium equipment, athletic field, basketball courts, handball courts, and horseshoe pits.
6. Harvard Parkette - Children's play area and open space.
7. Community Center - Auditorium and meeting rooms.
8. Municipal Swimming Pool - Swimming pool (equipped with diving boards' and wading pool).
9. School Outdoor Play Area - The Los Angeles Board of Education Youth service Division has eight school playgrounds to be used during off-school hours. Except for Peary Junior High School, which is open on Saturday and Sunday from 10:00 to 12:00 noon, all other school playgrounds are open Monday through Friday, 3:00 to 4:30 p.m. The Gardena High School gymnasium is open to the public by special arrangement.

Today the community is served by six local parks a eight school playgrounds.

TABLE I
EXISTING OPEN SPACE LAND

Public Open Space and Recreational Facilities

A. Parks

1. Rowley Park	17.1 Acres
2. Bell Park	2.0 Acres
3. Thornburg Park	2.3 Acres
4. Freeman Park	2.8 Acres
5. Recreation Park	4.8 Acres
6. Harvard Parkette	.5 Acres
	29.5 Acres

B. School Playgrounds

1. Peary Junior High School	7.8 Acres
2. Purche School	5.5 Acres
3. Chapman School	2.7 Acres
4. 153rd Street School	5.0 Acres
5. Amestoy School	3.6 Acres
6. 156th Street School	4.4 Acres
7. Denker Avenue	5.7 Acres
8. Gardena High School (City of Los Angeles)	19.4 Acres
	54.1 Acres

C. Municipal Service Areas

1. Manhattan Blvd. Median Strip	1.0 Acres
2. Vermont Median Strip	5.70 Acres
3. Dominguez Channel	35.71 Acres
4. 135th Street Storm Drain	8.29 Acres
5. Wilton Place Storm Drain	<u>2.50 Acres</u>
	53.20 Acres

D. Public Utilities

1. Railroad Right-of-Way	Not Available
2. Southern California Edison	18.00 Acres
3. Los Angeles City Department of Water and Power	<u>2.00 Acres</u>
	20.00 Acres

E. Vacant - Government Owned

1. Proposed South Gardena Parksite	25.0 Acres
2. 162nd Street and Normandie	.17 Acres
3. Brighton Ave. & Normandie Ave.	1.08 Acres
4. Proposed LaSalle Ave. Parking	<u>.37 Acres</u>
5. Proposed Artesia Freeway Overpass (State)	Not Available
	26.62 Acres

TABLE I (Cont.d)
EXISTING OPEN SPACE LAND

II. Private Open Space

A. Nursery Parcels	75.8 Acres
B. R-1 (Vacant)	2.1 Acres
C. R-2 (Vacant)	.7 Acres
D. R-3 (Vacant)	8.4 Acres
E. R-4 (Vacant)	3.6 Acres
F. C-P (Vacant)	3.3 Acres
G. C-2 (Vacant)	5.9 Acres
H. C-3 (Vacant)	18.8 Acres
I. M-1 (Vacant)	40.0 Acres
J. M-2 (Vacant)	75.0 Acres
K. P (Vacant)	<u>.3 Acres</u>
	233.9 Acres

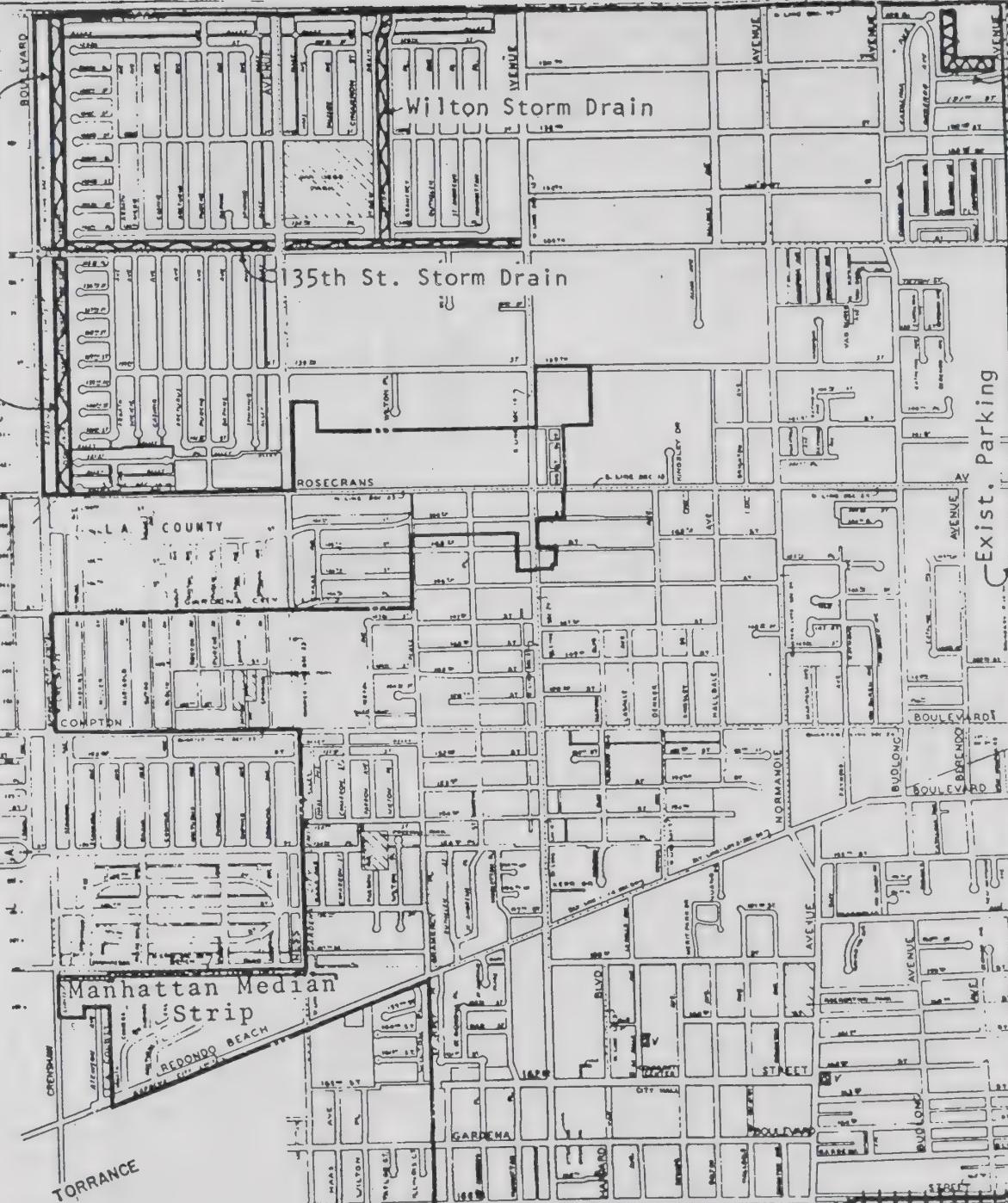
CITY OF LOS ANGELES

L.A. City
Water & Power

E-600

Dominguez LA County

Flood Control Chan.



Legend

1. Public Open Space

- [Dotted pattern] - Vermont Median Strip & Manhattan Median Strip
- [Cross-hatch] - Storm Drains & Channel
- [Checkmark] - State-Owned Vacant Land
- [Diagonal lines] - City-Owned Vacant Land

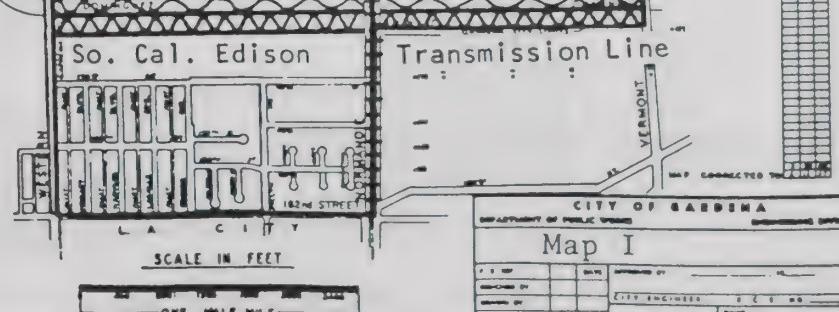
2. Railroad Right-of-Way

- [Dashed line] - P & E Railroad

3. Utility Easement

- [Wavy line] - Transmission Right-of-Way

EXISTING OPEN SPACE



CITY OF GARDENA

Map I

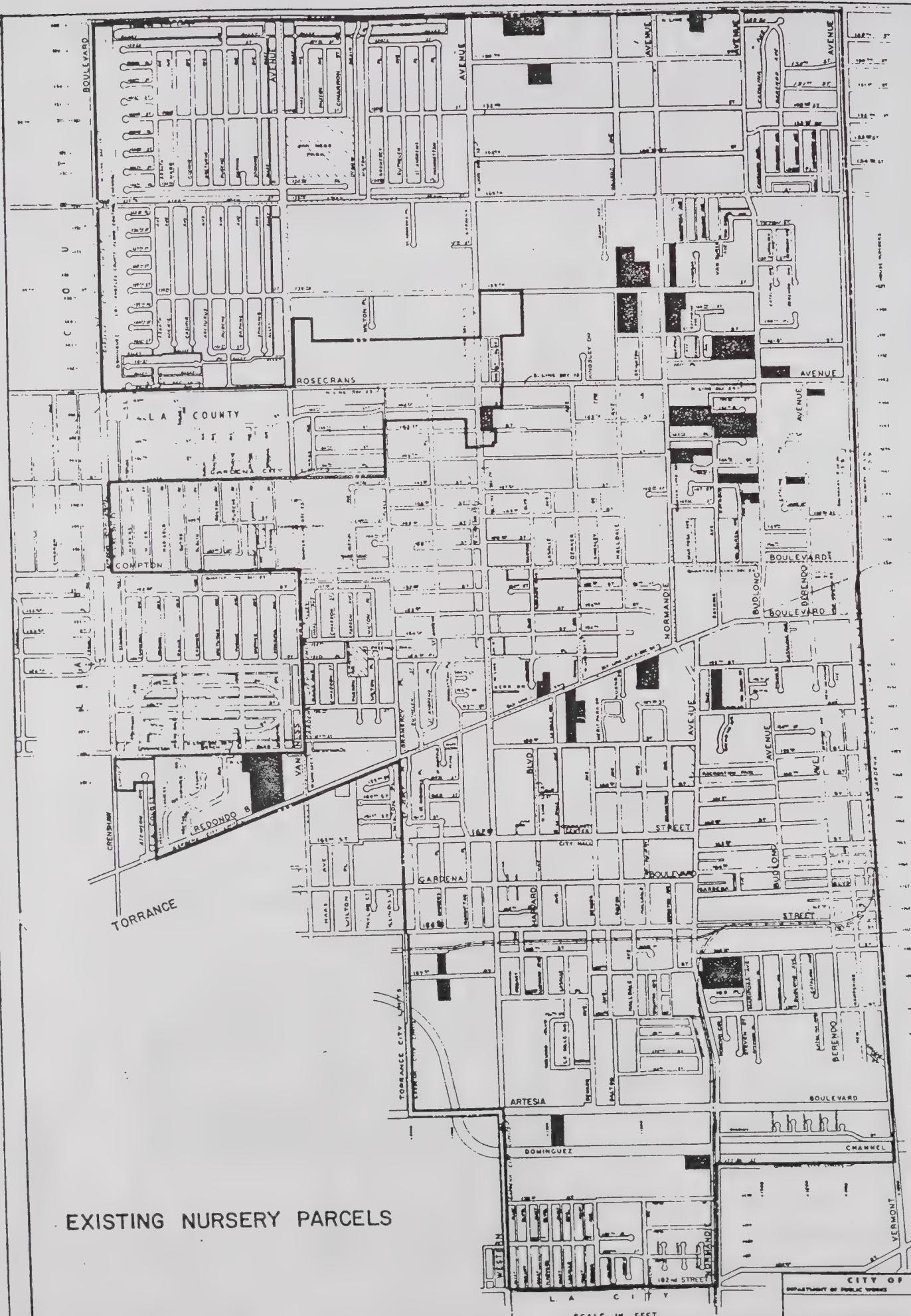
SCALE IN FEET

ONE HALF MILE

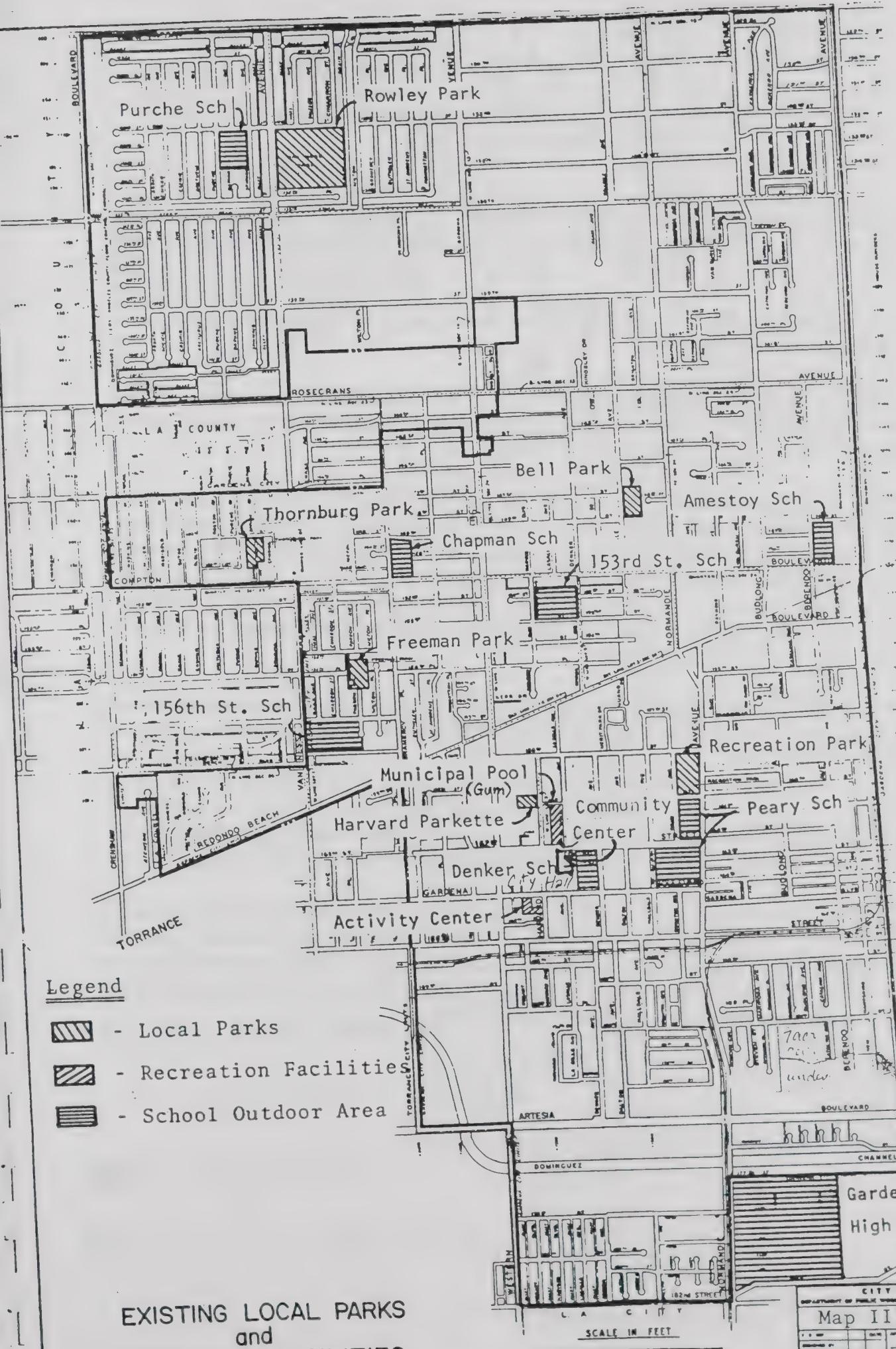


Proposed South So. Pacific Transp. Co.
Gardena Parksite

CITY OF LOS ANGELES



MAP OF LOS ANGELES



VACANT LAND ANALYSIS

Gardena's vacant lands are the primary source for potential open space and recreational activities. Gardena contains a total of 209.5 acres of vacant land, which is approximately 6.1% of the City's total area.¹

Included in this section is Map IV detailing the location of vacant lands, in addition to Table I showing acreage of such land by zone.

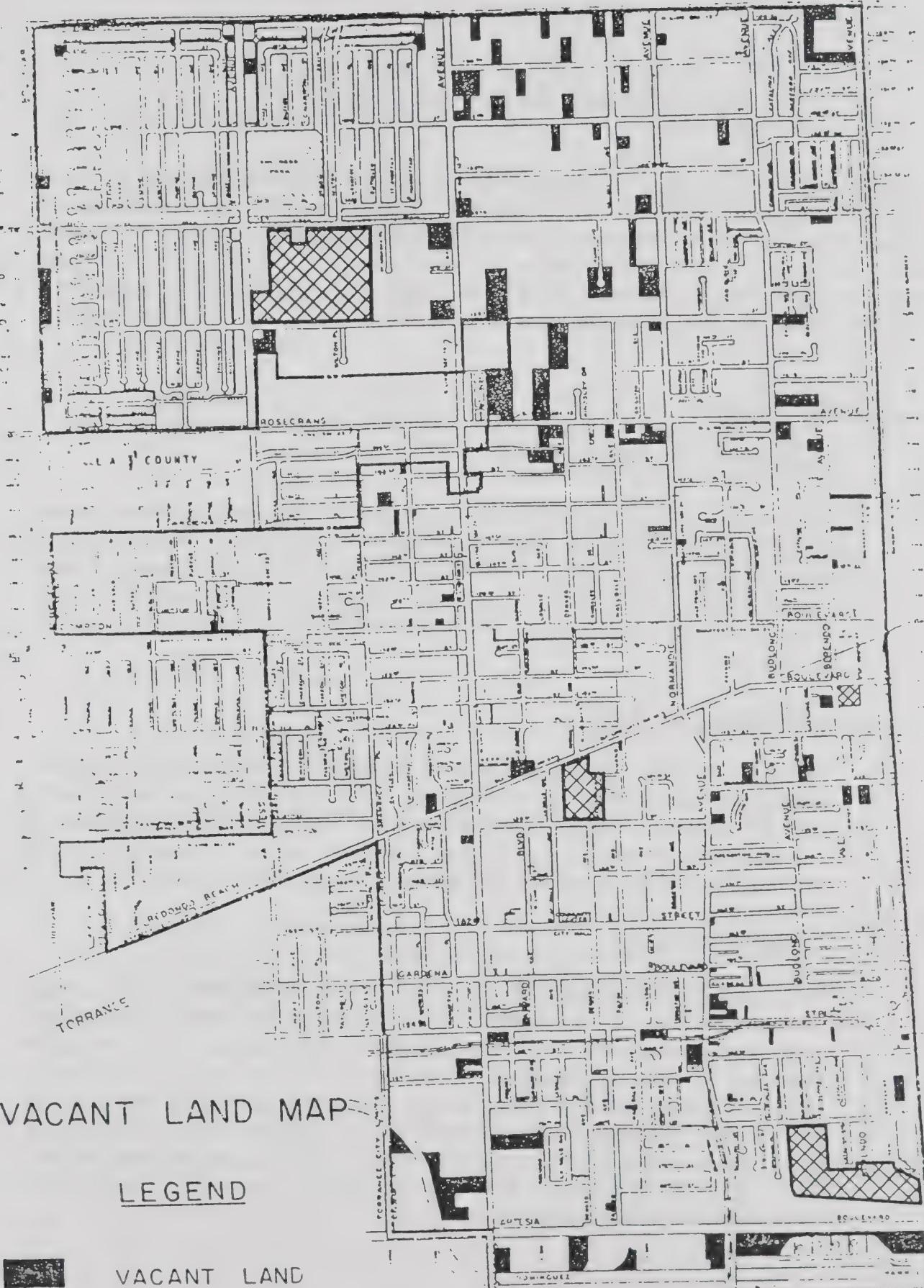
In analyzing the needs and deficiencies of recreational space for the City, Gardena has been divided into "neighborhoods" whose boundaries are determined by major traffic arteries. This will be discussed further in the following section of this element.

The findings of this analysis show that there are several neighborhoods deficient in open space. One possible solution in fulfilling this need is to use available vacant land throughout the city. However, too often neighborhoods in need of open space lack sufficient vacant land required to meet recommended development. Specifically, "neighborhoods" 4, 12, 13, 15 and 17 (refer to following section), which are in need of open space, have no available vacant land to fulfill their deficiencies. In such situations, an alternative to meet recommended open space development is through the demolition of existing structures.

However, "neighborhoods" which do have available vacant land will not necessarily utilize such land for open space development. It is important to consider what zone a particular vacant parcel is designated in addition to surrounding land uses, in order to determine the economic feasibility for open space and recreational development. For instance, Map IV will show a fair amount of vacant land in the north central portion of Gardena. However, because this area is mainly zoned for industrial activity, the vacant land within is not located in close proximity to residential areas. In this case, vacant land will be utilized for industrial purposes rather than retained as open space.

When referring to Table I, you will find that most vacant land in Gardena is industrially zoned. Consequently, there is very little vacant land (not zoned for industrial use) which is capable of accommodating a desired level of open space. In summary, it is a valid conclusion that the existing vacant land will neither solve the current open space shortage nor economically provide for desired open space and recreation projections for the future.

MAP IV OF LOS ANGELES



LEGEND



VACANT LAND



PLANNED DEVELOPMENTS

SCALE IN FEET

MAP IV

OPEN SPACE AND RECREATION STANDARDS

The total number of parks- and types of facilities needed for recreation purposes is based on estimated current deficiencies, type and location of facilities, and age groups. Standards recommended by the National Recreation Association and the California Outdoor Recreation Committee are utilized in the following analysis. It must be noted that these standards are high and very few communities in Gardena's size range and stage of development are capable of total achievement. However, we will set high standards and deviate only where practicality prohibits any other course of action.

A. Neighborhood Facilities

1. Neighborhood Pre-School Play Areas

Small, fenced-in playgrounds located in areas of high density, designed to cater to the needs of pre-school children. These facilities may be developed by either private or public interests. The size may range from 4,000 to 8,000 square feet serving between 100 and 300 pre-school children. Recommended walking distance is 800 feet. This facility should also contain such features as shaded areas, sand boxes, swings, benches, etc.

2. Neighborhood Playgrounds

These are primarily for children between the ages of 5 and 14. Recommended walking distance for this type of playground is 1/4 mile or less, serving not more than 800 children. The neighborhood playground should contain such features as volleyball and tetherball courts, and basketball courts. Elementary school playgrounds may fill the need for neighborhood playgrounds.

3. Neighborhood Parks

Neighborhood parks are primarily for the use of children and families. They should be located adjacent to, or combined with, school outdoor areas. Neighborhood parks, when located adjacent to schools, should be approximately three acres. Other than that, ten acres of ground should be allocated to this type of park, serving between 5,000 and 6,000 persons of all ages. Recommended walking distance is 1/2 mile or less. These parks should contain such features as a children's play area, picnic tables, wading pool, multipurpose recreation building, and off-street parking. The arrangement of space and facilities should reflect the population characteristics particular to the specific neighborhood.

4. Neighborhood Open Spaces

These open spaces should be carefully planned and adequately provided throughout the urbanized areas. They should enhance the physical image of the City and serve as a visual relief, especially in high density areas.

B. Community Facilities

1. Community Parks

The community park provides a wider range of recreation facilities than the neighborhood park. They are designed to serve a major section of the City containing 20,000 to 25,000 residents within an effective walking distance of one mile or less. Size of these parks should range from 10 acres when designed adjacent and integrated with a school, and up to 25 acres when not adjacent to a school. The park should contain such features as community buildings, lighted softball diamonds, tennis courts, picnic areas, children's play areas, landscaped grounds, swimming pool, activity courts, and off-street parking. The specific facilities and spaces should reflect the population characteristics of the particular service area.

2. Special Use Facilities

A facility for one special activity may be built, catering to a particular group within a community (a golf course).

C. Regional Facilities

1. Regional Parks

Regional parks provide major recreation facilities for large groups. They should contain an all-purpose recreation building, gymnasium, picnic grounds, pool, lake, day camp area, outdoor theatre, golf course, and other not duplicated in the local recreation areas.

DESIRABLE OPEN SPACE

The desirability of particular recreation facilities and open space is most directly influenced by the population they serve; therefore, a population density analysis has been created as a tool to aid in establishing needs and deficiencies (see Map V). Priority of development is directly related to population density and sociological characteristics.

The parks and recreation system is composed of several types of properties differing in function, size, location, service area, and development. In general, these properties can be divided into two groups: those required in all residential neighborhoods and those serving a large section of the community or the entire city. Group one includes neighborhood pre-school play areas, neighborhood playgrounds, neighborhood parks and neighborhood open space; group two includes the community parks, special use facilities, and regional parks.

A. Neighborhood Area Analysis

The characteristics of a "neighborhood" are prime factors in determining the various properties that parks and recreation facilities must have.

"Neighborhoods" are divided by major traffic arteries and "Areas" are determined by existing parks and recreation facilities provided.

Map V – illustrates seven "areas" and twenty-six "neighborhoods."

I. Area 1

a. Land Use

Area 1 contains Neighborhoods 1, 2, 3, 4, and 25. Neighborhoods 1 through consist mostly of single family houses, in addition to apartments and commercial activities along the perimeter of the area. Industrial activity is the major use which is found in Neighborhood 25.

b. Existing Parks and Recreation

1. A 17.1 acre community park (Rowley Park) is located in Neighborhood 2; the effective service area is within a one-mile radius.
2. A playground at Purche Elementary School is located in Neighborhood 1.

C. Proposed Development

One neighborhood playground is desirable in Neighborhood 4. Although Neighborhood 25 does not contain a park nor any type of recreational facility, open space development is not recommended. As previously mentioned, this area is

essentially- industrial and, because the population density is not significant, fulfillment of any open space deficiency is not of high priority.

II. Area 2

a. Land Use

This area contains Neighborhood 5 which consists of a majority of single-family houses, several apartments, commercial and agricultural uses.

b. Existing Parks and Recreation

There is neither a park nor any recreation facility at the present time.

c. Proposed Development

One neighborhood playground is needed.

III. Area 3

a. Land Use

This area consists of Neighborhoods 6 and 7 which contain mostly single-family residences with apartment units and commercial activity.

b. Existing Parks and Recreation

This area is served by a 2.3 acre neighborhood park (Thornburg Park) in Neighborhood 6, a playground at Chapman School, and the Serra High School facilities, both located in Neighborhood 7.

c. Proposed Development

No additional park or recreational facility is needed in this area.

IV. Area 4

a. Land Use

Neighborhoods 8, 9, 10, 11, 12, and 13 consist of apartments in addition to single-family homes.

b. Existing Parks and Recreation

This area is served by a two-acre neighborhood park (Bell Park) in Neighborhood 8 and two school playgrounds. (The Amestoy School is located in Neighborhood 10 and the 153rd Street School is located in Neighborhood 11).

c. Proposed Development

One neighborhood playground is recommended for Neighborhoods 9, 12, and 13.

V. Area 5

a. Land Use

Neighborhoods 14, 15 and 16 consist of a majority of single-family residences with scattered apartment units and commercial activities.

b. Existing Parks and Recreation

Neighborhood 14 is served by a 2.8 acre neighborhood park (Freeman Park), as well as the facilities provided by the 156th Street School.

c. Proposed Development

One playground serving neighborhoods 15 and 16 is recommended.

VI. Area 6

a. Land Use

This area contains the Civic Center, together with residential and commercial activities. Neighborhood 18 heavily consists of multiple-family dwellings.

b. Existing Parks and Recreation

This area is served by a 4.8 acre neighborhood park (Recreation Park), and a .5 acre playground (Harvard Parkette) both located in Neighborhood 18. Neighborhood 19 is served by the Municipal Activities Center. Also, Peary Junior High School and the Denker Avenue Elementary School, both located in Neighborhood 18, each provides a playground for this area.

c. Proposed Development

One neighborhood playground is recommended in Neighborhood 20 and one play lot is needed in Neighborhood 17.

VII. Area 7

a. Land Use

Area 7 consists of Neighborhoods 21, 220 23, 24, and 26. Neighborhoods 22 and 23 contain a majority, of single family homes, as well as multiple units scattered throughout the area. Also, a large state-owned vacant lot is located in this area. Neighborhoods 21 and 24 are equally divided into two usages: (1) single family units, and (2) industrial activity. Neighborhood 26 is largely industrial with scattered commercial activity and apartment units.

b. Existing Parks and Recreation

There are no existing parks and recreation facilities in this-area. However, a 25-acre community park (South Gardena Park) has been proposed in Neighborhood 28 for the entire community.

c. Proposed Development

One neighborhood playground is recommended in Neighborhood 21 and 24, and a play lot in Neighborhood 23. Although Neighborhood 26 does not contain a park nor any recreational facilities, open space development is not of immediate concern due to the abundance of industrial activity and an insignificant population density.

B. Proposed Annexation Areas

I. Proposed Annexation Area 1

a. Land Use

PAA 1 consists of two neighborhoods. PAN 1 is characterized by single-family, residential homes. In addition, both commercial and industrial activities are located in this area. Industry is the main activity found in PAN 2, which also contains commercial usage scattered throughout the area.

b. Existing Parks and Recreation

There are no existing parks nor are there recreation facilities in this area.

c. Proposed Development

One neighborhood playground is recommended in PAN 1.

II. Proposed Annexation Area 2

a. Land Use

PAN 3 is entirely characterized by single-family, residential homes.

b. Existing Parks and Recreation

This area is not served by any park or recreational facility; however, Freeman Park is immediately to the east and Thornburg Park is located just north.

c. Proposed Development

One neighborhood playground is recommended due to the fact that major streets must be crossed to reach existing facilities.

III. Proposed Annexation Area 3

a. Land Use

Land is utilized equally by both single-family homes and commercial activities. In addition, a small amount of multiple-dwelling units are also located in this area.

b. Existing Parks and Recreation

Neither parks nor recreational facilities are located in this area.

c. Proposed Development

This particular area is located adjacent to Gardena High School. Although PAA 3 itself does not contain a park, nor any recreational facilities, PAA 3's proximity to the high school may fulfill any open space and recreational deficiency found in this area.

C. City-Wide Analysis

The National Recreation Association has adopted a standard of ten acres area of parks and recreation area per one thousand population; however, six of these ten acres should be regional parks and four acres local parks and recreation areas. The four-acre recreation areas can again be divided with two and one-half acres for school outdoor play areas with one and one-half acres for local parks and playgrounds.

The City of Gardena has approximately 29.5 acres of local park areas and 54.1 acres of school play areas. On the basis of ten acres per thousand population, the City with its present population of 44,536 would need 445 acres of parks and recreation area in all categories to fulfill the present needs.

Table II indicates the needs and deficiencies of recreation facilities.

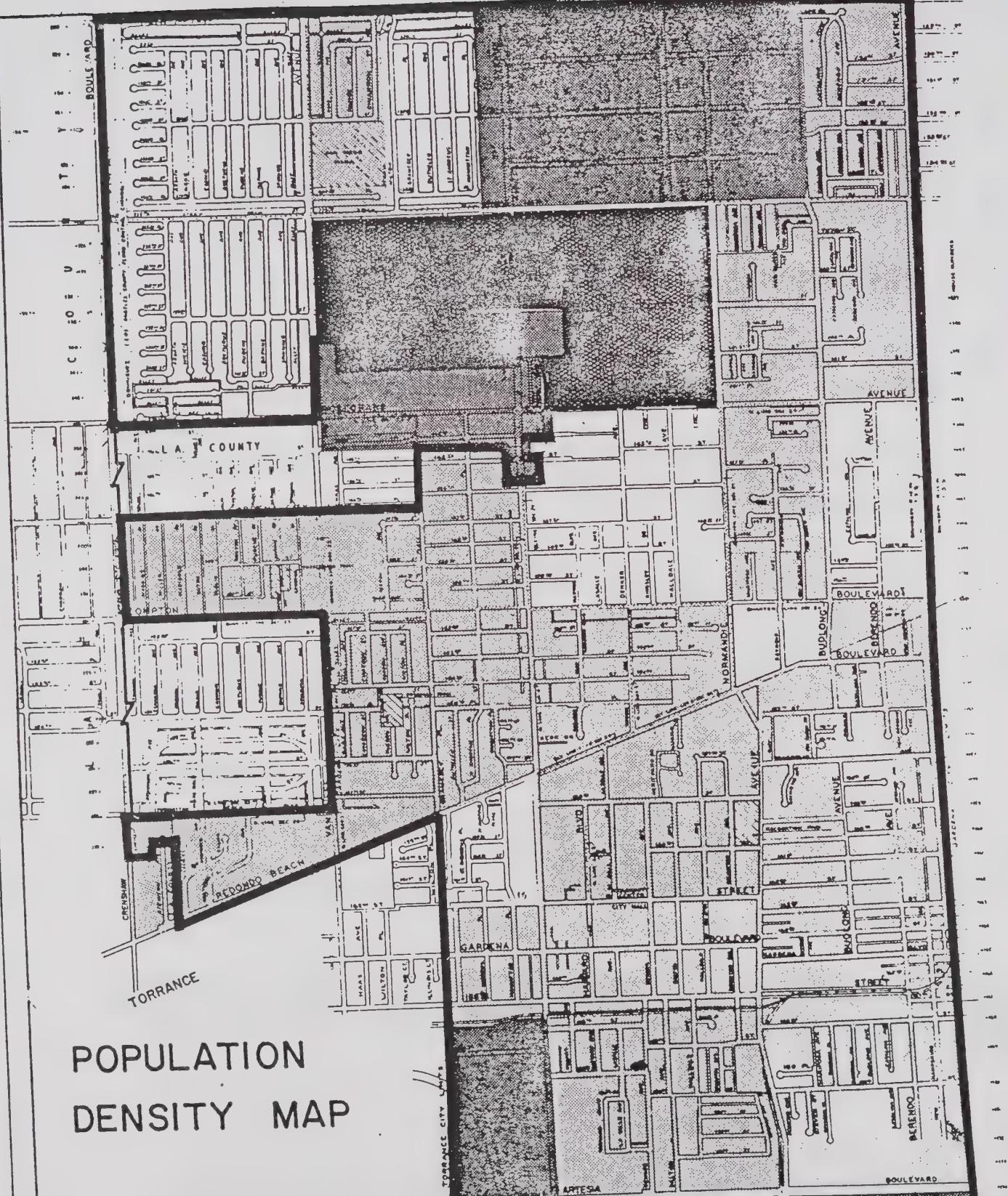
Age group analysis is important in determining the type of recreational facility to be provided because different age groups have different interests in recreational activities.

1. Pre-school children (age: 4.75 or under) - school play area, play apparatus and indoor activities.

2. Elementary school children (age: 4.75 to 11.5) - school playground, play apparatus, and indoor recreation.
3. Junior High School boys and girls (age: 11.5 to 13.5) school playground, cultural activities, and various sports (football, basketball, volleyball).
4. High School boys and girls (age: 13.5 to 18) - Various organized sports including gymnastics, swimming, baseball, etc., and dancing.
5. Young Adults (age: 18 to 21) - Organized sports such as those mentioned for High School students, along with camping and hiking.
6. Young married couples with one or no children (age: 21 to 30) - Various outdoor recreations including picnics, hiking and camping, and other forms of entertainment such as concerts or movies.
7. Families with one or more children (age: 21 to 45) Basically, the interests are the same as in No. 6, although we may observe less emphasis on activities which require more money than other activities.
8. Middle aged couples (age: 45 to 65) - Family gatherings picnicing, and attending concerts. We may also observe a renewed interest in various subjects (photography, music, etc.).
9. Older couples (age: 65 and older) - Various indoor recreations and other activities which do not require physical exertion upon participation.
10. Elderly single (age: 70 and older) - Interests here would be similar to those mentioned in No. 9. Emphasis upon social gatherings may be observed since we are dealing with single men and-women.

The median age of Gardena is 31.47 years, which indicates that a more passive type than active type of activity is demanded. The degree of various recreational activities for different age groups are given in Table III.

MAP OF LOS ANGELES



**POPULATION
DENSITY MAP**

LEGEND

- ZERO POPULATION
- 1 - 7 per acre
- 8 - 15
- 16 or more



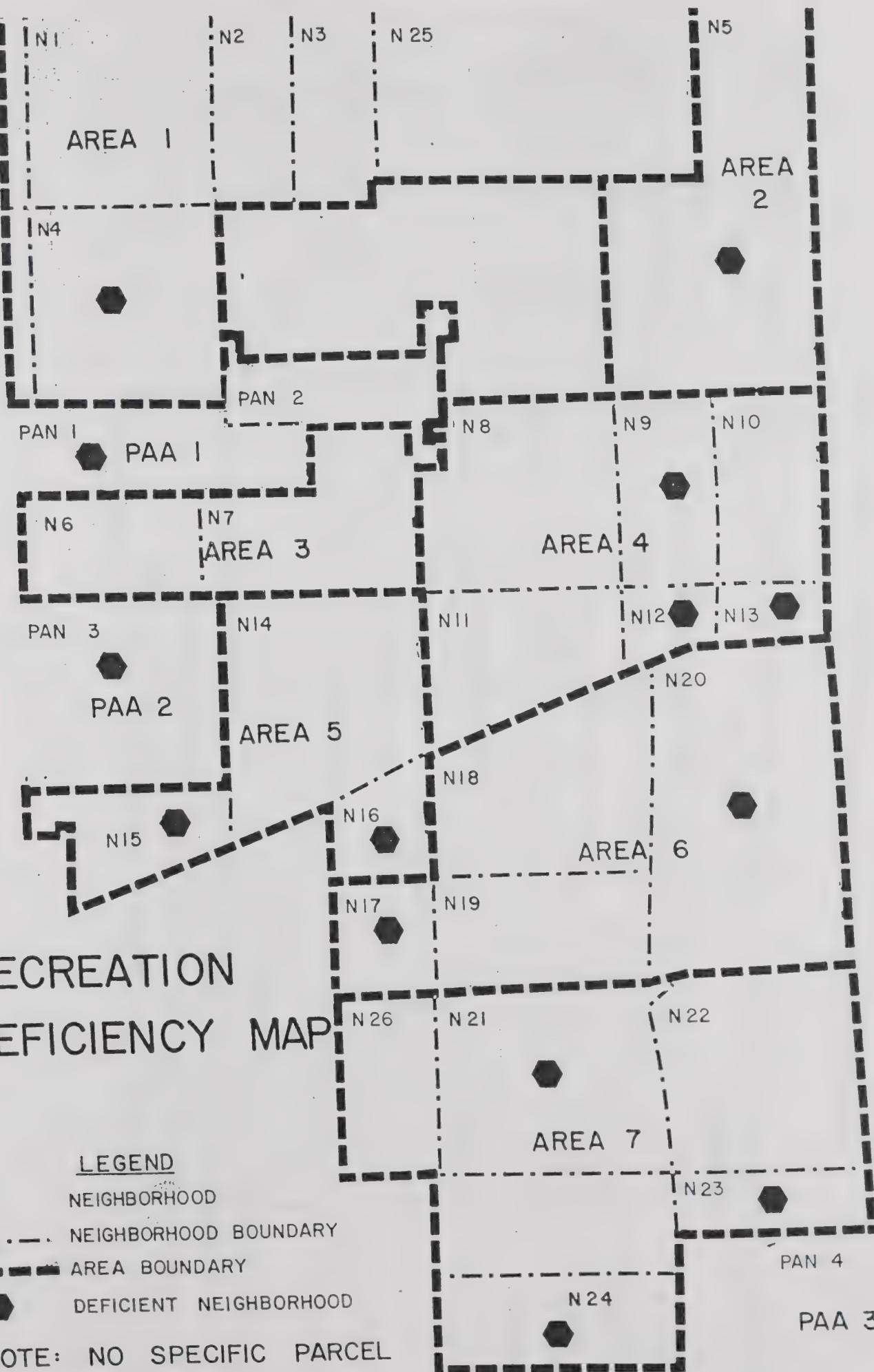


TABLE II
NEEDS & DEFICIENCY ANALYSIS FOR OUTDOOR RECREATION FACILITIES

TYPE OF FACILITIES	PRIMARY RESPONSIBILITY	SIZE	EXISTING NUMBER	TOTAL ACREAGE	COUNTY STANDARDS	PRESENT REQMNTS	PRESENT DEFIC.	1983 REQMNTS	DEFIC TO 1983
Local Parks & Recreation	City	0.5-17.1 acres	6	29.5	1½ acres / 1000 persons	66.75 acres	37 acres	89.25 acres	59.75 acres
School Outdoor Play Areas	L.A City School District	Varies	8	54.1	2 ½ acres /1000 persons	111.25 acres	57 acres	148.75 acres	94.65 acres
Regional Parks	County of L.A	36.22 - 84 acres	2	120.22	6 acres / 1000 persons	267 acres	137 acres	357 acres	236.78 acres
SUBTOTAL				203.82	10 acres / 1000 persons	445 acres	241 acres	595 acres	391.18 acres
Golf Courses	County of L.A	131- 172.56 acres for 18-hole per course	3 inc. 2 within regional parks	458.56 c	One standard 18-hole course for each 90,000 persons	1	0 d	0	0
GRAND TOTAL		622.38							

- a - Assuming a population increase to 59,470 in 1983.
- b - Elementary through high school with existing outdoor area, based on State of California standards.
- c - Total acreage golf courses including both independent and within regional parks.
- d - There are two 18-hole golf courses in regional parks and one outside regional parks.

TABLE III

DEGREES OF ACTIVITIES

AGE GROUP	CLASSIFICATION	ACTIVE	PASSIVE
4.75 or under	Pre-school	1	1
4.75 - 11.5	Elementary	3	2
11.5 - 13.5	Intermediate	4	4
13.5 - 18	High School	6	4
18 - 21	Young Adults	6	4
21 - 30	Young Married	1	5
21 - 45	Families with one or more children	2	3
45 - 65	Middle Age	2	3
65 or older	Older Couples	0	3
70 or older	Elderly Single	0	3



RECOMMENDATIONS

Based on current trends, Gardena's population will continue to grow resulting in the construction of new multiple-family units and the annexation of pre-gently unincorporated properties. Thus, several open spaces and parks must be added to accommodate the present deficiencies and future needs. The following recommendations will assist in meeting the demands on open space and recreation in Gardena.

A. Peripheral Local and Regional Parks and Recreation

There are five local parks, one golf course, and two regional parks near the City. These existing recreation facilities would be of great value to nearby residents if they are encouraged to use them.

Table IV and Map VII indicate the existing peripheral parks and recreation facilities.

**TABLE IV
PERIPHERAL PARKS & RECREATION FACILITIES**

Name	Location	Acreage	Facilities	Beneficiary
Regional Parks				
Alondra	County of L.A.	84	Commercial bldg., gymnasium, camp & picnic grounds, pool, lake, playplayfield & football field	City-wide
Victoria *not indicated on map	County of L.A.	36.22	Recreation bldg., gymnasium, picnic area, pool, playfield, day camp, archery range, basket-ball court., tennis & badminton courts	City- wide
Golf Courses				
Alondra	County of L.A.	155	Club house, 18 holes	City-wide
*Victoria	County of L.A.	172.56	Club house, 18 holes	City- wide
Western Avenue	County of L.A.	131	Club house, 18 holes	City-wide

Name	Location	Acreage	Facilities	Beneficiary
<u>Local Parks</u>				
Helen Keller	County of L.A.	6.63	Recreation building, play field, pool, picnic area, ball field.	Neighborhood 5
Rosecrans Playground	City of L.A.	10.54	Activity building, picnic & play areas, 3 base ball diamonds	Neighborhood 9, 10, 12, 13 & 20
Spenser	Torrance	4.5	Tot lot, picnic area, basketball court, baseball diamond	Neighborhood 24
Angela Davis	Hawthorne	5.0	Picnic area, tot lot, shuffle board, croquet, 1, 4 handball, volley ball baseball diamond	Neighborhood
Bodger	County of L.A.	10.8	Rec. bldg., playfield, picnic area & ball field	Neighborhood 6

B. Efficient Use of Present School Outdoor Play Areas & Other Facilities

The availability of existing school playgrounds should be extended to after school hours and weekends. An agreement with the School District for using indoor facilities for educational and cultural development is recommended. Such centers shall consist of several evening programs such as driver's education and training, drama, music, interior decorating, and arts and crafts.

C. Existing Local Parksite Improvement

Any area whose condition is undesirable should promptly be corrected.

D. Future Parksite and Open Space Developments

The following ten-year proposed Capital Improvement Plan is recommended by the Parks and Recreation Department to the City Council and the Planning Commission.

1. 1973 - 74 - Gardena Community Center Complex - A community center and multipurpose gymnasium within the civic center.
2. 1973 - 76 - South Gardena Parksite - a 25 - acre community park which includes a recreation center, four tennis courts, two baseball fields, soccer and foot ball fields, children's play area, bike paths, base ball fields, indoor pistol range and picnic facility. The location is bounded by the South Pacific Railroad, Vermont and Normandie Avenues, and Artesia Boulevard (See Map IV).
3. 1974 - 75 - Rowley Park - A second phase improvement, calling for consultant analysis and design of a recreation building and a multi-purpose gymnasium.
4. 1975 - 78 - Park Land Acquisition - Three neighborhood playgrounds are recommended. The City should give serious thought to the purchase of additional property located in:
 - a. Neighborhood 5 Neighborhood playground, 2 - 3 acres.
 - b. Neighborhood 24 Neighborhood playground, 1- 2 acres.
 - c. Neighborhoods 9, 10, 12 and 13 - Neighborhood playgrounds - 2 acres total.
5. 1976 - 83 - Consideration to be Given Toward the Following Program Development.
 - a. Senior Citizen's Facility, which would include clubhouse and various outside court activities.
 - b. A cultural center emphasizing the theater arts.

E. Public Open Space-Beautification

The creation of meaningful open space beautification will have a significant benefit to the human environment; therefore, the City should take whatever steps are necessary to gain the support and cooperation of the State, Counties, and utility companies and the Southern Pacific Transportation Company to landscape their existing open space.

1. Transmission Rights-of-Way, Storm Drains, and Flood Control Channels - Green trails do not require great width. It is desirable to develop green trails along transmission rights-of-way and drainage channels for bicycle routes and walkways. (See Map I).

2. Vermont Median Strip and Railroad Right-of-Way - This strip of open space is suitable for green belt development and should be landscaped (See Map I).
3. Commercial and Industrial Areas - The City should initiate a study to provide open space-areas in commercial and industrial districts to provide recreational opportunities for employees. A system providing for private financial participation should be developed.

GARDENA

LEGEND

- LOCAL PARKS & PLAYGROUNDS
- REGIONAL PARKS
- GOLF COURSE
- PERIPHERAL PARKS

Map VII

LEGEND

LOCAL PARKS & PLAYGROUNDS

REGIONAL PARKS



PERIPHERAL PARKS

REC. FACH

IMPLEMENTATION

The following list summarizes those actions suggested for the implementation of a constructive recreation and open space program based on the established goals and policies of the City:

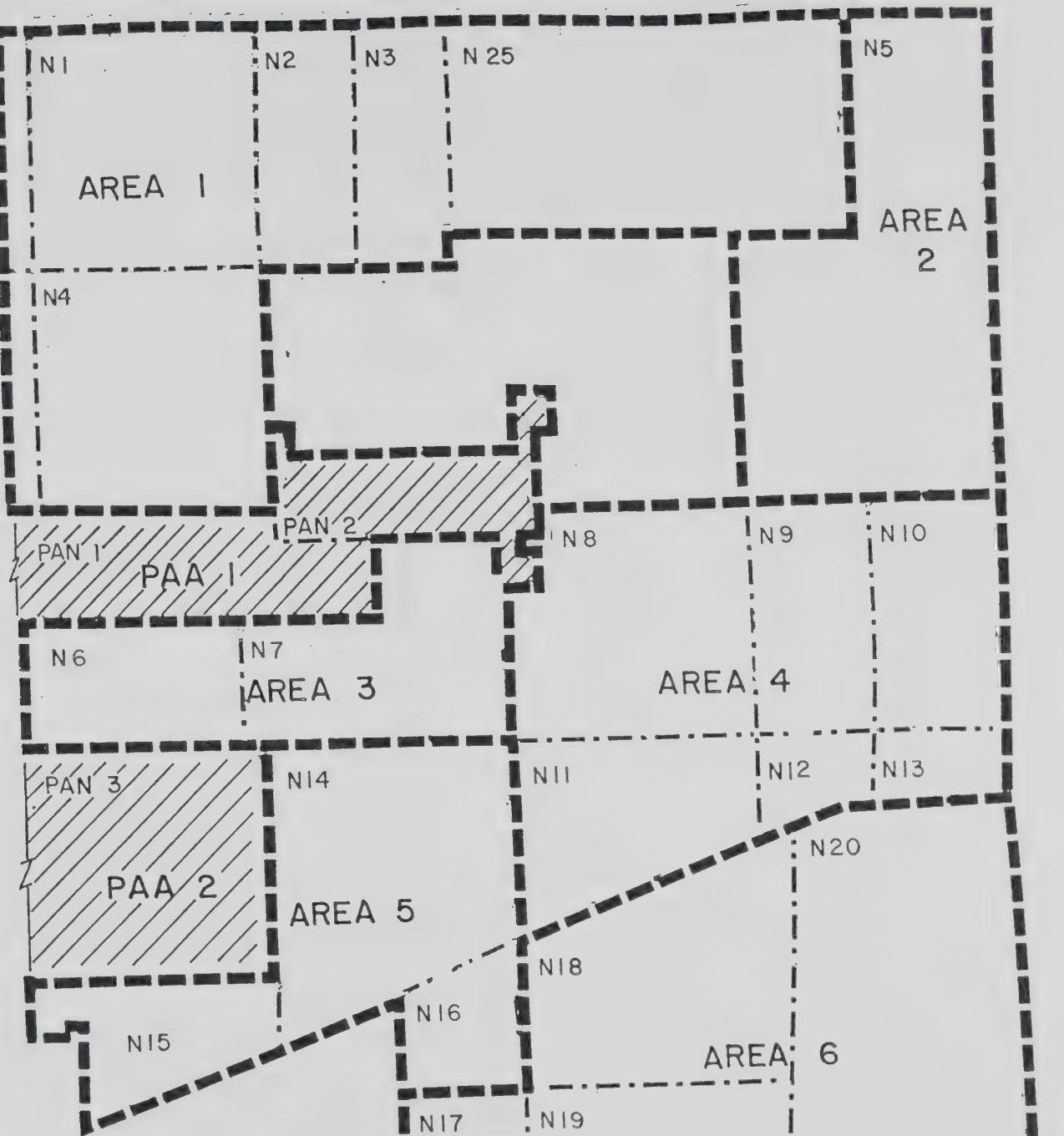
A. General

1. Extensive studies should be initiated to determine recreation deficiencies by neighborhood areas and the feasibility of eliminating their deficiencies.
2. Solicit citizen participation in open space planning realizing that the resident population is the ultimate barometer of all such programs.
3. Seek to cooperate with peripheral jurisdictions in the establishment of mutually beneficial open space and recreational areas.
4. Examine the possibility of utilizing School District facilities on an extended basis for recreation purposes.
5. Coordinate efforts of the Parks and Recreation and Development Services Departments in the area of open space planning and utilization.
6. As remedial actions are established to correct deficiencies in recreational facilities of neighborhood areas, they shall be incorporated into the 10-year Capital Improvement Parks Programs.
7. Study the feasibility of modifying the existing zoning in residential zones to require more open space.
8. Study the feasibility of modifying the existing zoning requirements for commercial and industrial zones to require more landscaping, aesthetic features and building setbacks.
9. Insure the preservation of existing open space by assigning "protective zoning" to such areas to prevent alteration.
10. Designate all undeveloped open space in terms of its status and desirability to maintain such undeveloped land as open space, and for what period of time (temporary vs. permanent open space).
11. Explore the feasibility of installing median strips (suitably landscaped) on major and secondary arterials of the City.

12. Establish current priorities for parksite development based on this document and all other pertinent data available so that the most critical needs will be fulfilled in as short a time as possible. Utilize the 10-year Capital Improvement Plan as the implementing tool of open space priorities.

B. Acquisition and Financing

1. Investigate all sources of Federal and State grants for open space and recreational development and utilize these sources wherever possible.
2. Establish open lines of communication with Federal agencies to coordinate resources, both financial and informational. Applicable agencies include: Bureau of Land Management, Department of Agriculture, U.S. Park Service, and Housing and Urban Development.
3. Explore the possibility of establishing a construction tax on all new residential development realizing that it is such developments which increase the burden of existing facilities.
4. Adopt the Quimby Act provisions requiring subdivisions to dedicate land for recreation facilities or make in-lieu payments to be used for recreational development.
5. Properties indicated on the Open Space Plan as utility rights-of-way but feasible for secondary recreational use require negotiation with the appropriate utility. Grants or licenses must be obtained allowing recreational uses not in conflict with a utility's requirement for the land.
6. Adopt an open space zoning ordinance within constitutional limitations to preserve those open spaces essential to the public welfare.
7. Establish procedures whereby the City may acquire private property for open space development through (a) mutual negotiations (between the City and landowner), (b) eminent domain, and (c) private gifts of land to the City.



NEIGHBORHOODS &
AREAS MAP

LEGEND

N NEIGHBORHOOD

— Neighborhood Boundary

— Area Boundary

■ PROPOSED ANNEXATION

PAA PROPOSED ANNEXATION AREA

PAN PROPOSED ANNEXATION NEIGHBORHOOD



CITY OF GARDENA CONSERVATION ELEMENT

PREPARED BY
DEVELOPMENT SERVICES DEPARTMENT
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ADOPTED

SEPTEMBER 25, 1973

RESOLUTION NO. 2938

CONSERVATION ELEMENT

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CONSERVATION ELEMENT
FOR THE
CITY OF GARDENA

INTRODUCTION

A. General

The City of Gardena, is for all practical purposes, a totally developed community with less than 6% vacant land. This vacant land exists only in small parcels and demolitions of old structures are frequently being accomplished to provide required space for new projects. In addition, Gardena does not have an abundance of other natural resources, such as wildlife, forests, rivers, harbors., minerals, and energy sources.

Due to the above facts, this Conservation Element shall concentrate on other aspects of conservation; specifically, cultural resources, historical architecture, flood control, land reclamation, prevention and control of the pollution of water resources and prevention, control and correction of erosion on soils. Recommendations to provide for these factors both in the present and future policies of the City are made. Open space, which is certainly a valuable resource to conserve, is elaborated on in the Open Space and Recreation Element. Since Gardena has such minimal resources, those that do exist are even more critical to the quality of the environment ' They must be carefully monitored and provisions made to perpetuate their existence less these resources fall prey to indiscriminate and unwise utilization.

This plan is in accordance with Section 65302 (d), of the Government Code of the State of California which states that the General Plan of every city shall have "...a conservation element for the conservation, development and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources." Also included in this element is land and water reclamation, water pollution control and control of the erosion of soils.

B. Environmental Setting

Gardena's agrarian past has been largely replaced by low rise residential development with supporting areas of strip commercialism. Light and medium industrial areas are located in the northern and southern areas. As previously stated, Gardena is a totally developed community, though the agrarian past is reflected in the existence of over twenty-five plant nurseries.

Efforts to expand the City boundaries are being directed toward annexation of adjoining County lands as community growth is internally stifled. Demolitions have been concentrated on smaller residential units to provide more intensive utilization of land. Multiple family rental units account for the greatest amount of construction activity indicating accurately the current density increase.

Still Gardena remains relatively low in density (7.3 persons per acre) and, with the adoption of stricter open space and parking requirements, the existing density should stabilize, a desire reflected by the Citizens' Committee for Zoning Revision and supported by local legislative efforts on a continuing basis.

The low profile of Gardena is emphasized by the fact that it is located on a flood plain, surrounded by similar low profile communities in various stages of development. The climate is moderate due to prevailing sea breezes, while rainfall averages are slightly higher than Los Angeles.

The homogeneity of surrounding communities makes community identification difficult but desirable from a sociological standpoint. The alternative is to blend in with the South Bay Community area with a population of over 900,000 and area of 125 square miles, entirely too massive for the local identification desirable to most Gardena citizens.

GOALS AND POLICIES

- (1) Actively participate in water quality control programs through municipal controls and support of the Regional Water Quality Control Board and County Sanitation District #5.
- (2) Increase the quantity and maintain the quality of the City's water table to provide an independent source of water. Continue as a member of the West Basin Water Replenishment District and support the Salt Water Intrusion Barrier Project and encourage their efforts.
- (3) Encourage the development of only those industries which have a proven track record for complying with environmental protection procedures.
- (4) Provide building controls through Code requirements to increase environmentally-oriented projects and provide a meaningful set of standards for Environmental Impact Reports (EIR's) incorporating conservation.
- (5) Preserve existing specimen trees, and introduce more trees on public property as a part of official City policy. Encourage use of trees and ground cover on private property through Code Amendments.
- (6) Provide for acquisition of land to be utilized for parks and recreation open space through City funds as well as private funding (Quimby Act).
- (7) Encourage and implement programs emphasizing Gardena's cultural heritage and ethnic make-up.
- (8) Conservation requires continual monitoring and is influenced by changing priorities and technological developments. This element is never final and complete and should be periodically reviewed as changes occur or at least every five (5) years.

ELEMENTS

RECLAMATION

One large parcel of land zoned M-1 (Light Industrial) remains within the city boundaries (located southeast of Van Ness and 135th Street). In its present state it is unusable, since thirty acres of the forty-two acre total consist of a 27-foot deep hole. This was excavated in 1955 as a storm water "catch basin" to provide temporary flood control for what is called the Hollypark area. Initially this "catch basin" provided 50-year storm protection for the area and was utilized until completion of the Dominguez Channel. It is no longer necessary for flood control since the Dominguez Channel performs this function. The City Public Works

Department confirms this evaluation in its study of the catch basin. It now exists in a useless state and community eyesore, not being adaptable to any public or private use without a massive fill operation. The current owners have proposed to fill the site and construct a light industrial park. Development of land requiring fill operations must be carefully monitored, which is especially true of this large parcel.

It is considered proper that the definition of reclamation should include the reuse of areas previously subjected to the activities of man. Demolitions have been increasingly utilized as a method for obtaining land on which to build in Gardena. This is due to the shortage of open space land. New construction on old sites is required to comply with all current building and zoning ordinances. One of the goals of this element is to provide increased building controls with environment and conservation as a key consideration.

FLOOD CONTROL

Gardena has a complete 10-year storm drain system covering the entire City. A 10-year storm system refers to the fact that the worst storm probable once every ten years will not overload this system (based on local rainfall averages and storm statistics). Gardena's system was designed in conjunction with the Los Angeles County Flood Control District and is directly supplemented by the Dominguez Channel (Los Angeles County Flood Control Basin). This channel provides for 40 - 50 year storm protection.

Flood control is imperative if valuable property and structures are expected to survive in climate weather and normal rainfall. Flood control also prevents the loss of top soils and potential loss of life due to flooding. In addition to the storm drain system, proper grading and ground cover (vegetation to hold top soils and absorb water) can do much to aid in flood control. It is City policy to encourage proper ground cover planting both from the aesthetic and practical points of view. A paved, open space is considerably less desirable than a potential water-absorbing planted surface. Landscaping requirements for new developments should reflect this fact to an even higher degree as the small amount of undeveloped land is utilized. Zoning requirements for increased open space and landscaping are the best means.

GEOLOGIC CONDITIONS

Water: In the early 1900's Gardena was known as the strawberry growing center of Southern California, and agriculture continued as the prime force through World War II. The individual farmers and residents drilled their own wells to irrigate the area and provide water for other uses. This constant tapping of the local water table depleted this source drastically. Gardena is now serviced by the Southern California Water Company which in turn is supplied by the Metropolitan Water District of Southern California. The City also retains a membership in the West Basin Water Replenishment District.

Local water-bearing sediments range from a depth of 65 to 1,500 feet below the surface. The most significant aquifers are located in Pleistocene strata from 150 - 600 foot depth. Five (5) fresh water wells are now being operated by the Water District and range in depth from 200 to 600 feet. Their locations are as indicated on the attached map.

The amount of water pumped from Gardena's wells has been controlled by the West Coast Basin Adjudication since 1961, with the ultimate goal of building up the depleted water table and therefore provide a plentiful local supply. Yearly adjustments in the quantity allowed to be pumped are made. The bulk of Gardena's water requirements are met from Colorado River and Northern California sources. West Basin Metropolitan Water connections to provide this water are in four locations and are indicated on the attached map.

The Water District's policy of supply is providing for local groundwater basin buildup by capture of local rainfall and local water is now only used for peaking requirements and storage for possible emergencies. This is in conformity with the City's water supply goals and will be beneficial in long-range terms, both to Gardena and surrounding communities tapping the same aquifers. Local water supplies could now totally meet the city's needs in an emergency but a larger quantity is definitely desirable and recommended.

Soils: Gardena has three basic types of soil: Yolo loam (7-27% clay, 28-50% silt, less than 52% sand); Romona loam and Dublin Clay/ Romona clay-loam '(27-40% clay, 20-45% sand). Romona loam located in the west central and northeast areas of the city is the most desirable. It is a high porosity soil capable of absorbing a great deal of rainwater before turning it into the streets hence is beneficial to flood control. It also binds fairly well and does not become "plastic" which makes it good for structural support. Dublin clay, located in the northwest areas, is considerably less desirable as it expands when wet and holds little water. East central Gardena is dominated by Yolo loam, similar to Romona loam in character but not as efficient in terms of water absorption.

Minerals: Gardena currently has no exploitable mineral deposits, however science and technology may change this situation in the future. If this occurs, it is recommended that Mineral Resource (MR) Zone be established with appropriate restrictions applied.

Local soils contain a great deal of clay. Previously, two clay deposits have been commercially exploited. One pit was located at 176th Street and Western Avenue and operated from 1927-1956. Gray common alluvial clay was extracted until the supply diminished (bottomed at 40 feet). A second pit operated on Artesia near Western Avenue for about the same period of time. Flat-lying, brown silty alluvian (red-firing) clay was extracted here (water hit at 40 feet).

Clay mining is no longer economical in this area; however, there are small, high quality deposits. Basically, there is a 60-foot deep crust in the area consisting of recent deposits of fine sand, silty clay and clay. The subsurface is basically Quaternary nonmarine deposits (Upper Pleistocene) below this is lower Pleistocene (from 240-600 feet in depth) containing the most ample water deposits.

WATER POLLUTION CONTROL

Prevention of the pollution of ground and surface waters is the responsibility of the Regional Water Quality Control Board. Local governments may adopt ordinances pertaining to this subject only if they are more restrictive than state law. In practice, few local governments have established water quality legislation; they rely instead on the ability of the Regional Board and its staff to monitor ground and surface waters and set standards which will protect the health and safety of their citizens.

As with water reclamation, Gardena's membership in the West Basin Water Replenishment District makes it partially responsible for water pollution control activities. The Seawater Intrusion Barrier Project, jointly sponsored by the West Basin Water Association, Replenishment District, and the Los Angeles County Flood Control District, prevents the ground water in Gardena and other South Bay Cities from being polluted by intruding seawater. This intrusion is prevented by the operation of a series of injection wells which have been drilled along the coast from El Segundo to the Palos Verdes Peninsula. Untreated Colorado River Water (31, 812 acre feet in 1972) along with reclaimed water from the Hyperion Sewage Treatment Plant, is injected into the water table preventing seawater intrusion.

The Regional Water Quality Control Board provides a valuable service to Gardena which the City itself could not supply. For this reason, Gardena should cooperate whenever possible with this agency.

Gardena itself must provide local ordinances to protect the groundwater supply. Pollution can strike the City's water table from commercial and residential sources. Hazardous liquids stored underground are subject to special requirements detailed by the County Health Department and Gardena Municipal Code. Current standards seem to be adequate to prevent leaking or percolation through the soil. Cathodic protection is required for all underground tank installations. This applies to underground transmission, franchise lines and all other potential pollutants. Gardena's plumbing code specifies cross connection and backflow devices where necessary to ensure no "chain reaction" pollution takes place due to a water main break.

FLORA

Gardena has a large variety of specimen trees within the City boundaries. The species of trees which have proven most adaptable to the Gardena area climate and soil conditions and which have the required characteristics of a good parkway tree with low maintenance costs are as follows:

Indian laurel, Carrotwood, Camphor, Jacaranda, Southern Magnolia, Bottlebrush, Brazilian Pepper, Sweet Gum and Victorian Box

The majority of trees in Gardena are located in parkways which is also the location for Gardena's current planting efforts. The Department of Recreation and Parks is responsible for parkway trees and has adopted, with the approval of the City Council a parkway tree master plan and planting list. All trees listed above are on this list which assists the City, individuals and service organizations in creating a uniform, high-quality, parkway tree plan throughout the City.

Currently, the Recreation and Parks Department replaces 50-60 trees per year; private individuals constructing new buildings are required to plant one tree per every 40-50 feet of parkway frontage as specified by the Recreation and Parks Department. This amounts to approximately fifty additional trees per year. During the past year, seven (7) varieties have been used in parkways (green belts between curb and sidewalk) their type and characteristics are listed below:

Types and Characteristics

<u>Species</u>	<u>Growth Habits</u>
A. Bottlebrush	Useful life span to 20 years. Evergreen compact, spherical. Blooms. Requires frequent trimming. Height to 20', spread to 20'; slow growth, few root problems
B. Camphor	Useful life span over 40 years. Evergreen spherical. Height 40-60' and spread 40-60'. Slow growing. Spreading roots.
C. Carrotwood	Life span to 20 years. Evergreen, spherical. Height 20'-40', spread 20-40'. Moderate growth. Some root problems.

D. Indian Laurel	Life span over 40 years. Evergreen pyramid. Height 20-40', spread 20-40'. Insect problems. Moderate growth. Few root problems.
E. Jacaranda	Life span over 40 years. Deciduous ' sparse blooms. Height 40-60', spread 40-60'. Insect problems. Moderate growth. Root problems.
F. Magnolia	Life span over 40 years. Evergreen spherical. Blooms. Height 40-60'. Slow growth. Some root problems.
G. Brazilian Pepper	Life span over 40 years. Evergreen spherical. Height 20-40'. Spread 20-40'. Rapid growth. Needs frequent trimming. Root problems.

Root problems are noted as a result of narrow parkways. Width should never be less than four (4) feet; and it is recommended that six (6) feet should be required on all new subdivisions. Six-foot parkways would alleviate root problems and be desirable from various practical and aesthetic points of view.

It is also recommended that it should be made official City policy to preserve specimen trees whenever possible and to finance parkway tree planting in addition to encouraging private citizens participation in planting beautification projects. Citizens should be informed as to the value of specimen trees and plants in the ecological cycle and their economic value as well.

The planting of thick shrubbery instead of, or in addition to, walls is recommended as a more environmentally pleasing method of enclosing open spaces. Ground cover, such as grass, should be encouraged in lieu of concrete type surfacing as a preferable means of surfacing with the added benefit of soil preservation and flood control.

CULTURAL RESOURCES

A. Ethnicity

Gardena's agrarian past is today reflected in the many plant nurseries located throughout the City. Ownership of these nursery parcels dates back to the influx of Japanese families in the 1930's. Strawberry farms, historically an important factor in the Gardena Valley, have not stood the test of time as have the nurseries.

Japanese influence can be readily seen almost everywhere in Gardena through the nurseries, architecture (including a large modern Buddhist Church), landscaping, and the large number of Japanese people who make up approximately 23% of the population.

The Japanese influence is the most unique cultural aspect of Gardena and contributes to a unique community identity without which Gardena would melt into the homogeneous mass of communities surrounding her. Realizing that community identity is strongly tied to the Asian influence, the City has gravitated to an Asian identification. Ichikawa, Japan was selected as Gardena's sister city in 1962. The Japanese community has established various cultural events on an annual basis, and Japanese business and banking interests are attracted to the area. It cannot be emphasized enough how important these factors are to Gardena community identity. Recommendations for continuation and expansion of cultural identity are endorsed as a resource of great benefit to the community.

A secondary cultural influence is exerted through the Mexican-American population (approximately 10%). This group is considerably less obvious in terms of influence, but considering their numbers, opportunities should be seized through the Municipal Activity Center (MAC) programs, and greater civic recognition. Historically speaking, Gardena is part of a large Spanish land grant to the Dominguez Family and this fact alone provides a means to develop at least one city-wide Mexican-American activity to recognize this fact.

B. Historical Architecture

Some structures still exist in Gardena dating back to the turn of the century, though at this time none have been historically designated. In recent action, the Planning Commission and City Council have created a Committee for the Preservation of Historical Sites. When completely implemented, this committee will identify sites of local historical significance and make recommendations for their preservation through protective zoning and, hopefully, muster financial support for beautification. The specific means for implementing an effective program of preservation is not yet worked out, but California Government Code, Title 4, Section 37361, will be used as a guide.

Gardena's structures are basically low rise in character and community needs do not seem to indicate a necessity for tall buildings, as the architectural character of Gardena can be preserved and enhanced with low rise, Asian theme structures, and quality design controls. An architectural review board should be established for this purpose, perhaps as an integrated part of the City Planning Commission.

CITIZEN RECOMMENDATIONS

In 1971, a citizens' committee was formed to provide input basically for zoning revision studies being conducted by the Planning Commission, City Planning Department, and private consultants. The official title for this group was "Citizens' Committee for Zoning Revision." In its final form, the committee, under the auspices of the City, made recommendations on a broad spectrum of community goals. It is noteworthy that the main thrust of this report indicates a deep concern for the future development of the City. The subject of conservation was studied by all the subcommittees and the following recommendations made:

- (1) Provide uniform and abundant tree planting.
- (2) Require dedication of land, or payment of fee, or both, as a condition of subdivision map approval (acquisition and preservation of open space land).
- (3) Provide for architectural quality control and rejuvenation of older business areas.

These recommendations are to be incorporated into new zoning ordinances. The conservation element has elaborated on these recommendations and others. They are of vital interest to the community and as such are incorporated into the goals section of this element.

IMPLEMENTATION AND SUMMARY

The following list summarizes those actions necessary for the implementation of a constructive conservation program based on Gardena's established goals:

1. Actively participate in water quality control programs by supporting the Regional Water Quality Control Board, and County Sanitation District and other governmental agencies. Also, by maintaining adequate Building Code controls on plumbing standards and other potential ground water pollution areas relating to construction.
2. Continue as a member of the West Basin Water Replenishment District and support the Salt Water Intrusion Barrier Project thereby assisting in the buildup of the City's water table while insuring protection from salt water contamination for Gardena and other South Bay cities.
3. Amend the local building and zoning codes to provide for more landscaped open space ground cover. Provide meaningful environmental review standards (EIR's) incorporating conservation criteria. Institute more restrictive parking requirements for multi-unit developments, thereby limiting density.
4. Preserve existing specimen trees and introduce more trees on public property as part of official city policy. Provide for 4-61 parkways wherever possible.
5. Provide for acquisition of land to be utilized for Parks. Additional sources of revenues for this purpose must be explored; construction tax on residential units, bonds and private donations are all potential sources.
6. Provide education programs to inform the citizens of the value both ecologically and economically of trees and other plant life.
7. Emphasize community identity through civic programs of ethnic and historical nature. Social functions and official recognition are two methods adaptable to immediate implementation.

Gardena's limited natural resources and recommendations for preserving and enhancing them have been detailed in the previous text. In essence, the most constructive policies for conservation as applied to Gardena consist of local building code amendments, conscientious planning and an active program of citizen education to promote conservation awareness in all applicable areas. We are entering an era of increased environmental concern brought about by the obvious deterioration of our land. A wasteful attitude toward our resources has depleted the supply at a time when technology and population growth require more than ever before. Only through dedication to new conservation policies can we ensure a desirable quality of life.

The recommendations presented in this initial Conservation Element are not intended to be inflexible or exhaustive. They represent a base on which the City can, and must, build a continually meaningful and comprehensive conservation program. Their effectiveness will best be served by a constant evaluation based on timely needs. In the final analysis, the decisions, responsibility, and accountability for Gardena's conservation program must be borne by the total community through its elected and appointed decision makers.

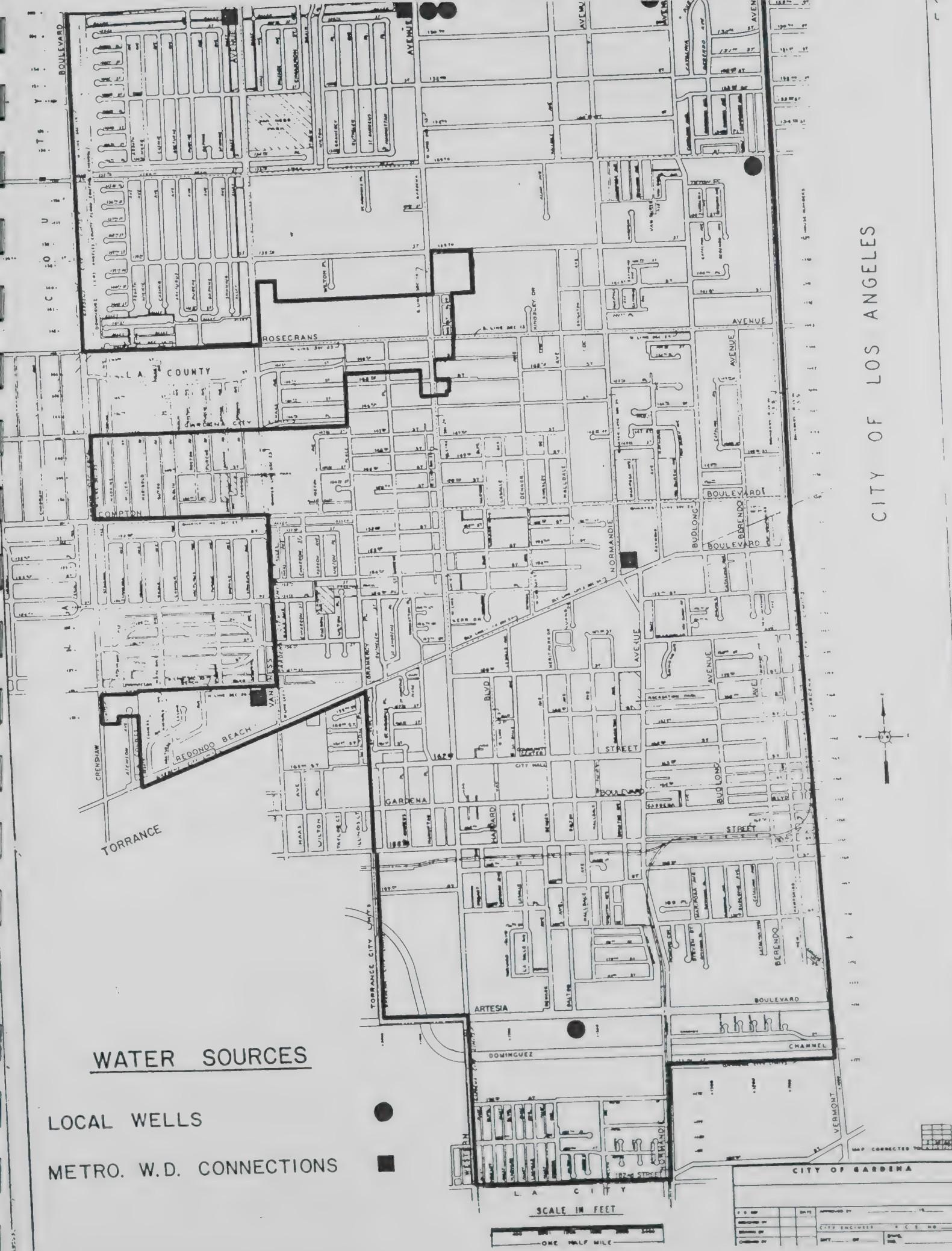
This is but one step in the quest towards a quality environment both for the present and for generations to come.

CITY OF LOS ANGELES

WATER SOURCES

LOCAL WELLS

METRO. W.D. CONNECTIONS





CITY OF GARDENA

NOISE ELEMENT

PREPARED BY

EARTH INFORMATION SERVICES
McDONNELL DOUGLAS ASTRONAUTICS COMPANY

IN CONSULTATION WITH THE

PLANNING DIVISION
COMMUNITY DEVELOPMENT DEPARTMENT
CITY OF GARDENA

ADOPTED

March 11, 1974
Reso. No. 3119

NOVEMBER 1974

ADOPTED NOISE ELEMENT
CITY OF GARDENA
GENERAL PLAN

PREFACE

This Noise Element was prepared by the Earth Information Services organization of McDonnell Douglas, in coordination with the Planning Department of the City of Gardena. It is an element of the General Plan of the City of Gardena and consists of this text with accompanying maps. Data sources, development methodology, and criteria rationale, are contained in a supporting Background Report.

NOISE ELEMENT

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NOISE ELEMENT
Section 1

INTRODUCTION

A. Authority

The State of California has mandated, through Title 7, Chapter 3, Article 5, the requirement that city and county governments adopt a general plan. Section 65302(g) of the Government Code requires a noise element as part of the general plan, incorporating the following features:

1. Contours of present and projected noise levels associated with existing and proposed transportation systems.
2. Desired maximum noise levels by land use categories.
3. Standards and criteria for noise emissions from transportation facilities.
4. Standards and criteria for compatible noise levels for local "fixed-point" noise sources.
5. Guide to implementation.
6. Appendix describing methodology of preparation and sources of data.

B. Purpose

The Noise Element is a statement of the City's policy and intent regarding land use in relation to environmental noise and the control of noise sources within the community. Its purpose is to provide a framework within which future planning and noise mitigating decisions will be made and implemented. It is intended to represent the consensus of the community's goals and objectives pertaining to the control of environmental noise.

In addition, the Noise Element is intended to provide a set of correlated procedural guidelines and criteria to be used by the City planning and engineering departments to minimize noise conflicts in existing situations and in new developments.

C. Scope and Application

The Noise Element, as part of the City's official plan, is confined to statements of policy, intent, goals and objectives, standards and criteria, and implementation guidelines. Supporting data and analysis, methodology and criteria rationale are contained in the Background Report.

Implementation of the Noise Element is to be achieved through improved planning and zoning regulations reflecting quantified noise criteria, development of noise abatement strategies, introduction of noise criteria in the building code, application of noise regulations controlling stationary and moving noise sources, and practical tools which can be used by the City planning department, the building department, and the enforcement agency in the day-to-day activities of the City.

D. Relationship to Other Elements

The noise element is inseparably related to several of the other elements:

1. Land Use Element: The noise element identifies the sensitivity of the various land uses to noise and establishes standards and criteria necessary to achieve compatibility of land uses in relation to noise.
2. Circulation Element: The circulation element, which correlates with the land use element and the housing element, in itself is a noise source which affects both land use compatibility and housing noise insulation requirements. The noise element closes the loop in this iterative planning process.

3. Housing Element: The noise element establishes standards for interior and exterior noise levels for dwellings, and provides guidelines for achieving these by site selection, orientation, and noise insulation features in building construction and site development.
4. Open Space Element: Human needs for open space are not generally related to noise criteria; however, in the planning process advantage can be taken of use of open space as a noise buffer between land uses which would otherwise be incompatible.

E. Shared Responsibility for Noise

The California Department of Transportation has recognized that vehicle noise attenuation is a shared responsibility (directive P74-47). To be eligible for maximum State assistance, accomplished local action should include:

- An adopted transportation noise element in the community general plan (as required by Section 65302(g), California Government Code).
- Subdivision regulations which provide for proper site design and building location where noise sensitive uses must locate in proximity to freeways.
- Zoning regulations which separate noise sensitive land uses from proximity to freeways and locate land uses compatible with traffic noise adjacent to freeways.
- Building construction requirements for soundproofing buildings from exterior noise.

F. Definitions and Terms

The following noise descriptors are employed in the noise element:

- dBA A measure of sound level; the "dB" denotes decibels, the "A" denotes a weighting that results in a noise measurement which approximates the frequency response of the human ear.
- Leq Equivalent sound level; dBA values averaged on an energy basis over a stated time period.
- Leq(24) The Leq of a 24-hour period.
- Ldn Day-night average sound level; same as Leq (24) except that the night-time (10:00 PM to 7:00 AM) levels are weighted by 10 dB, reflecting a person's increased sensitivity to noise at night. (A 10 dB increase is judged twice as loud.)
- CNEL Community Noise Equivalent Level; same as Ldn except in addition to the 10 dB night-time weighting, the evening (7:00 PM to 10:00 PM) levels are weighted by 5 dB. For most situations the Ldn and CNEL will be equal within a fraction of a dB, and may be considered synonymous.
- Ambient When used in connection with sound level refers to the prevailing background noise, exclusive of a particular intruding sound under consideration.
- Contour When used in connection with noise, refers to a line of constant sound level; similar to contours of constant elevation on a geological map.

Section 2

EXISTING NOISE PROFILES

The existing noise profiles of the City of Gardena are shown by the noise contour map, Figure 1. The contours are in terms of Ldn, the average day-night sound level, which has the nighttime levels weighted by 10 dBA, reflecting a person's increased sensitivity to noise at night. The Ldn is the acoustical scale adopted by the Environmental Protection Agency to define levels of environmental noise in residential areas.

For all practical purposes, these contours may be considered the same as CNEL contours, and therefore permit correlation with the State directive on minimum noise insulation requirements for multifamily dwellings (California Administrative Code, Title 25, Chapter 1, Subchapter 1, Article 4, Noise Insulation).

Although the presented contours represent noise from all sources, it is evident that they are dominated primarily by transportation noise. The contour map constitutes partial fulfillment of the City's responsibility under the concept of shared responsibility by the State for vehicle noise attenuation (**CALTRANS** directive P74-47).

In addition to the Ldn contours, the noise level at selected locations (schools and parks) is shown in terms of Leq (8). This is the average level during the eight-hour period 8:00 A.M. to 4:00 P.M., and is more meaningful for areas which are used primarily in the daytime.

Before assessing the environmental impact of the City of Gardena's present noise profiles (Figure 1) on present and future land use compatibility, it is first necessary to identify the sensitivity of various land uses to noise, and second, to establish meaningful land use noise standards. This is done in the two following sections of the noise element.

PRESENT NOISE CONTOURS

OCTOBER 1974

CONTOUR LINES ARE AVERAGE DAY-NIGHT LEVELS (L_{dn})
CIRCLED FIGURES ARE $L_{eq}(8)$ LEVELS FOR THE PERIOD 8:00 AM TO 4:00 PM

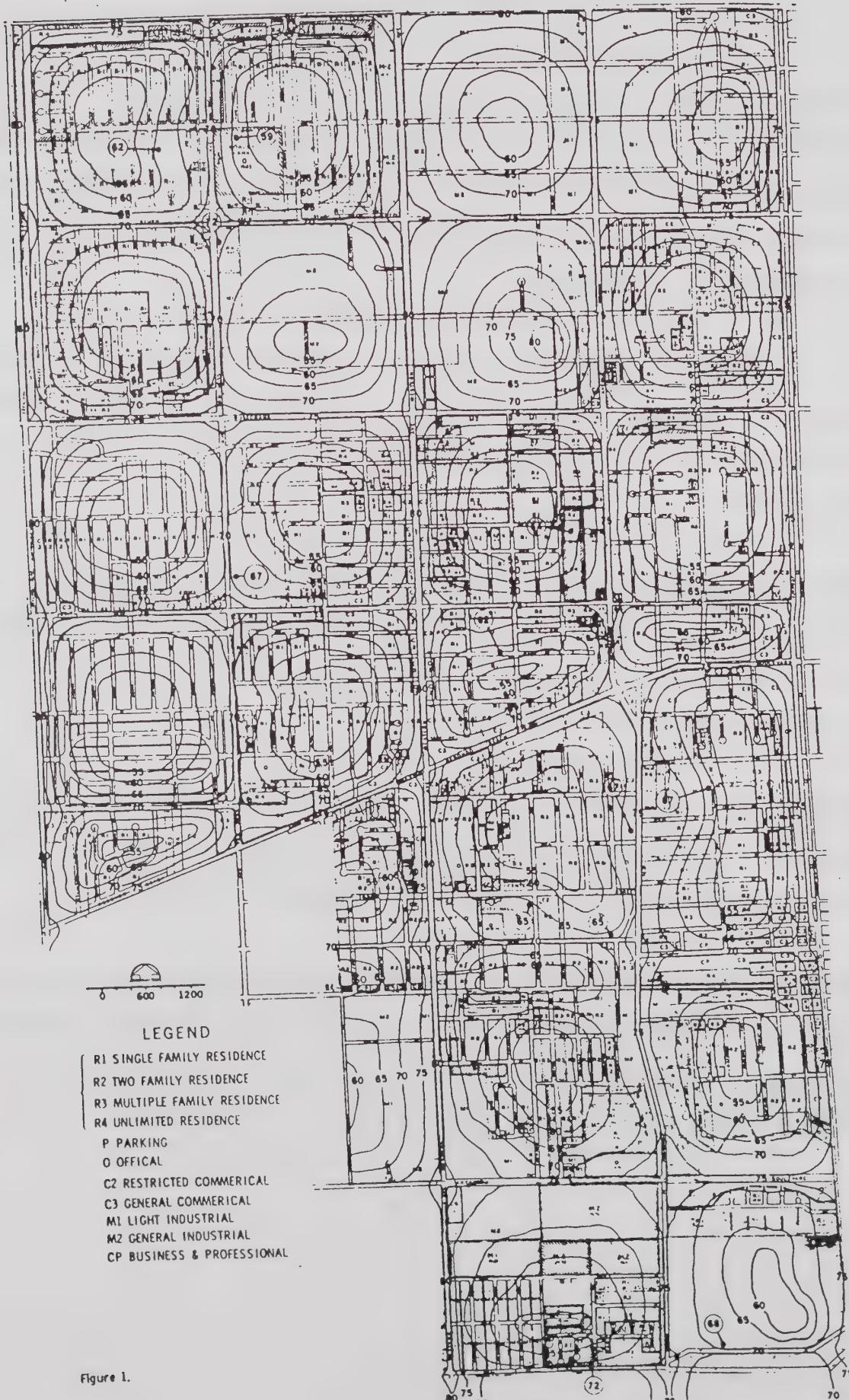


Figure 1.

Section 3

LAND USE SENSITIVITY TO NOISE

Planned land use compatibility with environmental noise requires identification of noise-sensitive uses. In addition, best use of land requires identification of those situations where a noise-sensitive use can be made compatible with a noise environment by ameliorating techniques.

The Noise Element deals with both of the above requirements through the following system of classification of land uses by noise-sensitivity and adaptability to ameliorating measures:

A. Sensitive land uses. Sensitive land uses are sub-classified as:

1. SENSITIVE -- those uses where a quiet outdoor environment is important to health and quality of life. This category includes residential uses which feature an outdoor life-style, convalescent uses where the outdoor environment is important and parks which are relaxation oriented.
2. CONDITIONALLY SENSITIVE -- uses which are noise-sensitive but which can be made compatible to a more severe noise environment by noise insulation features in building construction, and/or noise abatement techniques of layout, shielding, barriers, topography, etc. Uses which can meet the above criteria, under appropriate controlling conditions, include residential uses not featuring outdoor life styles, schools, churches, and general hospitals.

B. Non-sensitive land uses. Uses where a quiet outdoor environment is not critical to indoor or outdoor activities. Included are most commercial uses, industrial uses, parks which are sports oriented, playgrounds, and land devoted to transportation systems.

Without implying that noise mitigating considerations are not to be applied in the planning for these land uses, these uses are classified as NON-SENSITIVE.

The application of these sensitivity classifications, together with the associated noise standards (Section 4), is outlined in Section 8.

Section 4

Section 4

NOISE STANDARDS AND CRITERIA IN RELATION TO LAND USE

Based on criteria developed by the Environmental Protection Agency, the Department of Housing and Urban Development, the California Department of Housing and Community Development, and the U. S. Department of Health, Education and Welfare, the City of Gardena has adopted noise standards for the three noise sensitivity land use classifications. The criteria developed by the EPA are issued as information only, not as standards, and are the levels deemed "requisite to protect health and welfare with an adequate margin of safety." The EPA cautions that the criteria "do not take into account cost or feasibility," and that "States and localities will approach this information according to individual needs and situations." For reasons of social and economic feasibility, the standards adopted by the City permit levels 10 dBA higher than the EPA criteria.

Use-sensitivity noise standards adopted by the City of Gardena are shown in the following table. Rationale for the selection and use of these standards is contained in the Noise Element Background Report.

USE-SENSITIVITY NOISE STANDARDS		
Land Use Sensitivity Classification	Exterior Noise Standard	Interior Noise Standard
SENSITIVE	Ldn 65	Ldn 55
CONDITIONALLY SENSITIVE	Ldn 75	Ldn 55
NON-SENSITIVE	Ldn 75	Ldn 75

Section 5

PRESENT NOISE IMPACTED AREAS

The present noise profiles of the City of Gardena can now be examined in relation to existing land zoning and adopted land-use noise standards. This comparison shows the present "noise impacted" areas of the City, Figure 2. The shaded areas identified as residential, schools, parks, and Hospitals are those areas enveloped by a noise environment of Ldn 65 or greater. The shaded areas identified as commercial and industrial are enveloped by a noise environment of Ldn 75 or greater.

The shaded areas thus identify areas of actual or potential incompatibility of land use with the present noise environment. Not shown in Figure 2 are the additional incompatible situations resulting from non-conforming residential use in industrial zones.

Compatibility of areas outside the corporate limits of Gardena, but candidates for annexation, is also indicated on the map, Figure 2.

PRESENT NOISE IMPACIED AREAS

IMPACTED AREAS ARE:
L_{dn} 65 FOR RESIDENTIAL
L_{dn} 75 FOR COMMERCIAL AND INDUSTRIAL

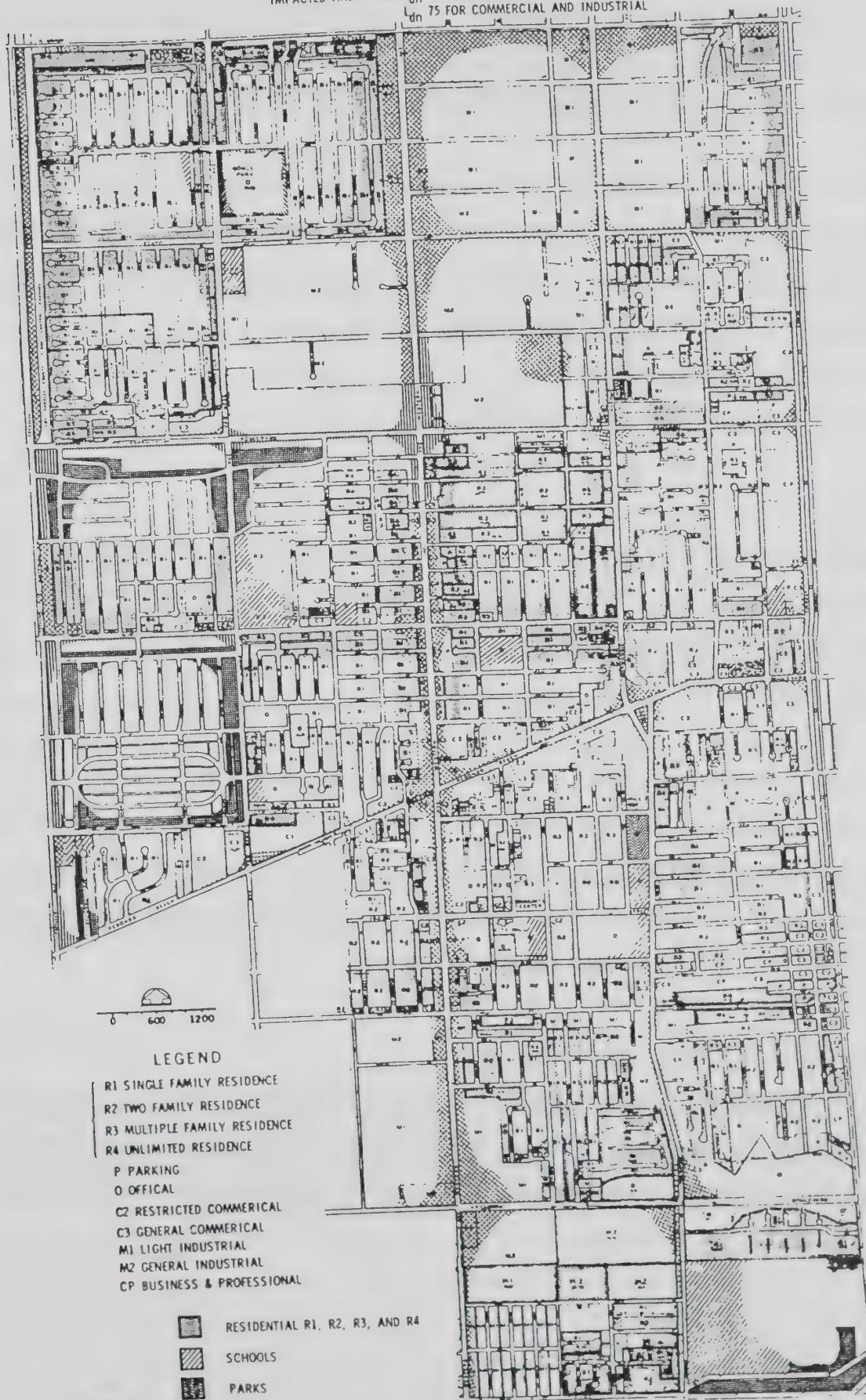


Figure 2.

Section 6

PRESENT AND FUTURE NOISE SOURCES

Discussed in this Section are the present and future noise sources which impact land use in the City of Gardena, and which affect the health and quality of life of its citizens. This Section of the Noise Element is informative, rather than directive, other than to identify the issues and local factors which must be addressed in the future planning process.

Present and future noise sources of concern include:

Arterial Traffic

Forthcoming mass transportation systems will place heavy demands on associated traffic arterials. At the same time, truck traffic will increase with a growing economy. To preserve tranquility and quality of life in residential areas, there is a need for circulation plans which divert truck and through traffic from residential streets.

Although the State has preempted the City in establishing motor vehicle noise standards, it is the prerogative and obligation of the City to make use of these standards and supporting regulations to improve the environmental climate for health and quality of life. Forthcoming State regulations establish standards for certification of exhaust systems and provide simple roadside enforcement procedures available for use by the local enforcement agency.

RTD Near-Term Bus Improvement Program

Included in the "near-term" planning of the RTD, is a Bus Improvement Program. This program includes an "Express Freeway Service" which will run on the Harbor and San Diego Freeways, and provides for "Park and-Ride" lots, one of which is to be constructed just south of the City of

Gardena, in the vicinity of Vermont Avenue and Artesia Blvd. The arterials running through the City leading to the parking facility will have increased traffic volume with resultant noise impact. The need for a continuing interface with the Circulation Element and the transportation agency is indicated.

Proposed Artesia Freeway

Present adopted plans for the proposed westerly extension of the Artesia Freeway show freeway termination 1/4 mile west of Normandie Avenue, with improvement of Artesia Boulevard to the Western Avenue intersection. Completion of this portion of the freeway is scheduled for 1979. The noise impacted area for the already completed portion of the Artesia Freeway, is a band 600 feet wide on each side of the freeway.

Increased traffic flow has the effect of increasing the Ldn by about 3 dB for each doubling in traffic flow. Although quieter vehicles are being produced by the diesel truck manufacturer due to pressure being applied at the Federal level, the benefit derived from quieter vehicles could be negated by an increased volume of traffic flow. For planning purposes, it is therefore assumed that future noise levels along the freeway extension will be substantially the same as the 1974 levels along the completed portion.

In addition, the termination of the freeway will impact arterial traffic and noise levels in the vicinity of Western Avenue and Artesia.

City Busses

Significant technological progress is being made in the quieting of diesel trucks and busses, both in new manufacture and in retrofit kits for selected existing vehicle/engine models. Reduction of noise from this source is possible through future preferential procurement policies, and retrofit action where feasible.

Southern Pacific Railroad

Present operations of the Southern Pacific Railroad are:

Two round trip operations per day, seven days per week, servicing primarily the Industrial area in Torrance, and occasional daytime service to the lumber yard at Western Avenue and 166th Street in the City of Gardena. Daytime hours of operation are variable. Night time operations affect the City only during the hours between 9:30 P.M. to 10:00 P.M. as the train proceeds to Torrance, and from 3:00 A.M. to 4:00 A.M as the train returns from Torrance.

The number of operations does not permit the development of meaningful Ldn contours; however, HUD Noise Assessment Guidelines would place the noise impact boundary line 180 feet from the right-of-way. There is no projection of increased Southern Pacific Railroad operations on this right-of-way. (At maximum traffic capacity, HUD criteria would place the noise impact boundary line 600 feet from the right-of-way.)

Although the Federal government has preempted the setting of noise emission standards for railroads, the City can regulate the use of bells, whistles, speed, and hours of operation.

Airport Noise

The present and projected 1980 CNEL contours for Los Angeles International Airport are well to the north of the City, and accordingly no significant noise problem is presented.

Industrial and Commercial Noise Sources

The northern and southern sections of the City present problems identified in the Land Use Element. There are a great many dispersed light and general industrial (M1 and M2) zones bordering residential (R1, R2, R3 and R4-) zones, as well as mixed uses within a zone. Noise problems have been created by residential uses bordering on machine shops, railroad spurs, and

dog kennels. Absence of buffers between uses aggravates the problem. The City's Land Use Element addresses the problem of noise interface incompatibility between uses and provides policy direction for the progressive removal of nonconforming uses and improved zoning criteria. In addition to this, quantitative noise criteria are needed in the planning process and in the implementing regulations.

Construction and Maintenance Equipment

At present, the control of noise emanating from construction and maintenance equipment in the City of Gardena is through the regulation of hours of use. These sources are significant contributors to community noise exposure, and are to be subject of Federal regulation. With implementation of the Federal regulations, it will be feasible for the City to adopt quantified noise regulations to better control these noise sources. "Quiet" jackhammers, tampers, and air compressors are currently available or under development. In its own procurement actions, the City can include noise criteria or give preference to quieter products.

Ascot Park

Ascot Park lies just outside of the City of Gardena, next to the Norman Precinct area. Almost year-round, Ascot Park is used as a raceway for competition motor bikes and race cars. These events are generally held in the evenings and attract fairly large crowds. The noise levels generated by these sporting events will vary depending upon the class of competition and type of vehicle event. In general, the residential area next to the raceway is impacted by the noise, which at times is exceedingly annoying.

The City of Gardena has no control over the noise created at Ascot Park other than the influence it can exert on the City of Los Angeles planning authorities.

Neighborhood Noise Sources

Noise exposure allowables at a citizen's property line, due to sources such as radio, TV, recreational and social activities, air conditioning equipment, swimming pool pumps, animals, hawkers, peddlers, sound amplification system is etc., are currently not quantified in terms of level and duration. Better control of these noise intrusions, as well as intrusions from industrial or commercial zones, can be effected by addition of quantified noise standards to the existing City noise ordinance.

Citizen understanding, participation and cooperation is essential for effectiveness.

Multifamily Dwelling Noise Sources

Transmission of noise from one dwelling unit to another can be exceedingly annoying and detrimental to quality of life. With increasing use of high density multifamily complexes, noise control in building plan approval stage is of paramount importance.

The State has adopted minimum standards for noise insulation requirements for multifamily dwellings, which address the problem of noise transmission from one dwelling unit to another, and also noise transmission from exterior to interior. The standards are intended for inclusion in local building codes, and their application will improve the quality of life in multifamily dwellings.

Section 7

GOALS AND POLICIES

Having assessed the present noise environment, established land-use sensitivity standards, and identified future trends and opportunities, the City of Gardena has formulated goals and policy direction to be applied in the planning process:

A. Statement of Goals

Goals of the City of Gardena, in relation to noise, are:

- Orderly removal of non-conforming land uses which result in noise incompatibility.
- Planned compatibility of commercial and industrial noise sources with present and future conforming noise-sensitive land uses.
- New residential developments, and other uses where noise affects quality of life, planned in conformance to adopted noise standards and criteria.
- Allocation of noise impact mitigation costs to the agency or party responsible for the noise incompatibility.
- Reduction of environmental noise levels consistent with criteria requisite for health and quality of life.
- Protection of areas that are presently quiet from future noise impact.
- Application of technical, procedural, and funding assistance available at the State and Federal level for noise ameliorating measures.

B. Statement of Policies

Policy direction has been formulated for the achievement of the City's goals in relation to noise. The following set of policy statements has been developed with consideration of effectiveness in goal achievement, the social and political implications, and economic feasibility.

It is the policy of the City of Gardena to:

- Identify the sensitivity of the various land uses to noise, and to establish acceptable noise standards and criteria consistent with health and quality of life goals;
- Employ effective techniques of noise mitigation, based on quantified noise standards, through appropriate provisions in the building code, in the subdivision procedures, and in the zoning and noise ordinances;
- Develop strategies for the orderly implementation of mitigation measures for present noise impacted areas, such as the R1 uses adjacent to M-1 uses;
- Analyze the economic impact of noise resulting from any proposed development project, and develop justification and plans for equitable resolution;
- Develop land use compatibility criteria directed at prevention of encroachment of new noise sources on existing land uses;
- Develop zoning, subdivision, and development controls directed at prevention of encroachment of noise-sensitive uses into present or planned industrial or transportation system noise-impacted zones.

- Make use of recently adopted Federal and State noise standards regulating allowable noise emission from motor vehicles;
- Make use of recently adopted State regulations on noise insulation requirements for dwellings;
- Make use of forthcoming EPA regulations requiring the identification of noise characteristics of construction equipment, and other products distributed in commerce;
- Promote increased public awareness concerning the effects of noise;
- Encourage the State Department of Transportation to conduct an active highway noise abatement program with scenic/aesthetic considerations;
- Urge continued Federal and State research into noise problems and recommend additional research programs as problems are identified;
- Maintain updated determinations and evaluations of the present and future noise levels associated with all significant transportation facilities in the City-,
- Pursue a policy of more vigorous enforcement of existing laws relative to noise and establish more quantitative laws that will be more clearly understood and enforceable.

Section 8
GUIDE TO IMPLEMENTATION

The following steps are requisite to implementation of the Noise Element:

A. Plan Foundation

The foundation upon which the plan can be made operative must first be established:

1. Classifications of Land Uses

In accordance with the classification system of Section 3, all uses identified in the Gardena Municipal Code shall be classified as either SENSITIVE (S), CONDITIONALLY SENSITIVE (CS), or .NON-SENSITIVE (NS). A partial listing would be:

NOISE CLASSIFICATION OF LAND USES			
USE	S	CS	NS
Residential, single family	X		
Residential, low density	X		
Residential, medium density	X		
Residential, high density		X	
Community clubs		X	
Schools		X	
Parks, sports oriented			X
Parks, relaxation oriented	X		
Libraries		X	
Churches		X	
Museums		X	
Hospitals, general		X	
Hospitals, convalescent	X		
Sanitariums	X		
Homes for the aged	X		
Commercial activities			X
Industrial activities			X

2 . Use-Sensitivity Noise Standards

Exterior and interior (where applicable) noise standards shall be assigned to the three use-sensitivity classifications:

USE-SENSITIVITY NOISE STANDARDS			
Land Use Sensitivity Classification	Exterior Noise Standard		Interior Noise Standard
SENSITIVE	Ldn	65	Ldn 55
CONDITIONALLY SENSITIVE	Ldn	75	Ldn 55
NON-SENSITIVE	Ldn	75	Ldn 75

3. Projected Noise Impacted Zones

An official "Projected Noise Impacted Zones" map shall be adopted; patterned after Figure 3, representing a 10-year projection, up-dated biennially. The zone boundaries shall be defined in terms of distance from the noise source, which in turn is developed from projected noise contours.

The "Projected Noise Impacted Zones" map shown in Figure 3 is intended to provide a baseline from which adjustments can be made iteratively with the Circulation Element. The means of adjusting the noise impacted zone boundaries for changing circulation conditions is contained in the Noise Element Background Report.

Baseline assumptions employed in developing the noise impacted zone boundaries of Figure 3 include:

- a. Major arterials -- projected average daily traffic count
50% higher than present values, with peak hourly count 8% of daily average; zone boundary established using HUD Noise Assessment Guidelines criteria.

PROJECTED NOISE IMPACTED ZONES 1985

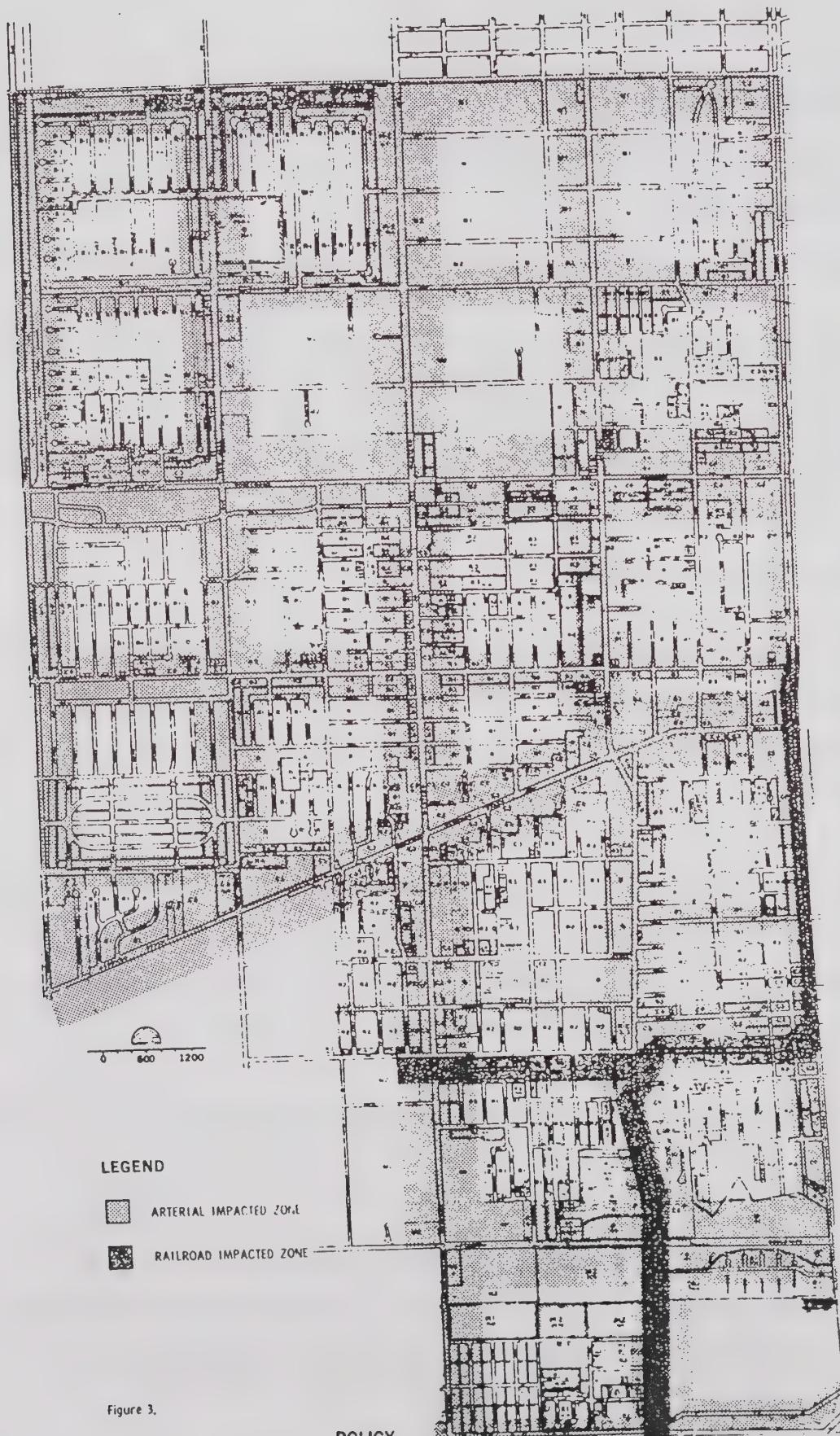


Figure 3.

- b. Artesia Freeway extension -- freeway noise same as present levels at existing freeway; placing zone boundary 600 feet from edge of right-of-way.
- c. Southern Pacific Railroad - no change from present levels; placing zone boundary 180 feet from edge of right-of-way.

The above zone boundaries are associated with an estimated average day-night level of Ldn,, 65. This is the dividing line between "Normally Acceptable" and "Normally Unacceptable" in the HUD criteria.

B. Land Use Zoning Criteria

New construction and future planning shall be guided by the following criteria. The intent of the criteria is to prevent noise sensitive uses being placed in areas where they will be incompatible with the present or projected noise environment.

- 1. SENSITIVE land uses shall not be permitted in NOISE IMPACTED ZONES other than by variance procedure, based on social and economic criteria. Existing nonconforming uses and structures will be treated in accordance with policy established in the Housing and Land Use Elements.
- 2. CONDITIONALLY SENSITIVE land uses may be permitted in NOISE IMPACTED ZONES providing that noise abatement measures are incorporated to meet interior and exterior USE-SENSITIVITY NOISE STANDARDS. This is to be controlled by conditional use permits requiring acoustical analysis.
- 3. NON-SENSITIVE land uses are not restricted by NOISE IMPACTED ZONES.

C. Conditional Use Permits

Conditional use permit procedure shall be used to:

1. Regulate the conditions under which CONDITIONALLY SENSITIVE uses may be placed in NOISE IMPACTED ZONES.
2. Regulate the requirements which must be met by new C and M uses where they abut on or are in proximity to R zones.
3. Regulate the requirements which must be met by new C and M uses where they abut on or are in proximity to existing SENSITIVE uses (regardless of zone).

The intent of the above is to prevent inroads of industrial or commercial noise into residential or other noise-sensitive areas, and to prevent sensitive uses developing in a manner to cause incompatibility with the projected noise environment.

D. Noise Ordinance

An improved, clearly understandable and enforceable noise ordinance shall be developed and adopted. The intent of the noise ordinance is to limit the intrusion of noise across property lines to acceptable values. Its application is threefold:

- Enforcement against unnecessary noise.
- Regulation, through conditional use permits, of noise intrusion across property or zone boundaries by noise from new sources.
- Basis for noise abatement assistance from the State.

Features of the Noise Ordinance shall include:

1. Noise standards shall be adopted for each of the zoning districts established in the Gardena Municipal Code. These noise standards may be lower than the corresponding Ldn USE-SENSITIVITY NOISE STANDARDS.
2. Allowable levels shall be expressed in dBA in terms of magnitude and duration exceedance of the noise standard.

2. Compliance with the ordinance shall be required by all persons, corporations, City agencies, transportation system agencies, etc., residing or operating within the City limits.

E. Building Code Provisions

California Administrative Code, Title 25, Chapter 1, Subchapter 1, Article 4, adopted August 1974, establishes new requirements for noise insulation in new hotels, motels, apartments, condominiums (multifamily dwellings). These regulations are designed to limit intruding noise from one dwelling unit to another, and also to limit intrusion of outside noise. These regulations will be applied to new construction in the City of Gardena.

F. Liaison with Transportation Agencies

To ensure that growth of existing transportation systems, and implementation of new transportation systems, do not have adverse noise impact on the City, liaison shall be maintained with the responsible agencies on matters of routes, local circulation considerations, source noise reduction features, path noise reduction measures, alternatives and noise-mitigating strategy. Agencies involved include:

- Southern California Rapid Transit District
- Southern Pacific Transportation Company
- California Department of Transportation

G. Motor Vehicle Noise

New provisions of the Vehicle Code (Section 27150.2, to be effective November 1975) will make it practical for local enforcement officers to control noise emission of automobiles and motorcycles on city streets. Application of these regulations in Gardena will have significant benefits in achieving a quieter environment and improved quality of life.

H. Construction and Maintenance Noise

Progressive reduction in construction and city maintenance equipment noise over the next decade is feasible. The City shall maintain a program to achieve this by:

1. Disseminating EPA noise data on construction and maintenance equipment to contractors serving the local area.
2. Encouraging contractors employ 'quiet' equipment in City contracts.
3. Employing noise standards Criteria in City procurements of equipment.
4. Regulating hours of use.

I. City Busses

Noise emission characteristics of City busses shall be periodically examined in light of existing and forthcoming technology developments. Retrofit noise reduction measures shall be applied where feasible, and preferential consideration shall be given to quieter vehicles in future procurements.

J. Procedural Guides

Because noise control in quantitative terms is relatively new in City planning and operation, procedural guides shall be developed. Topics to be covered are:

1. Land use planning in relation to noise
2. Circulation and noise relationships
3. Noise factors in use permits

4. Noise factors in building permits
5. Noise abatement techniques
6. Enforcement of the Noise Ordinance
7. Enforcement of the Vehicle Code

K. Public Relations

The Noise Element plan can be successful only with public understanding, support, and involvement. A public relations program shall be maintained to achieve this, and a single City focal point established.

L . Program Coordination

Because of the diverse aspects of the Noise Element plan, involving several City departments, with numerous outside interfaces and jurisdictional responsibilities, effective implementation of the plan requires the naming of one person on the City staff to serve as program manager of the Noise Element Implementation Program.

CITY OF GARDENA
NOISE ELEMENT
ENVIRONMENTAL IMPACT REPORT

A. Description of Project

The Noise Element, as part of the comprehensive general plan of the City of Gardena, encompasses all land and land uses within the present and projected corporate limits of the City. These boundaries, and the regional location of the City are shown on 'Maps A and B of the Land Use Element,

The Noise Element is a statement of the City's policy and intent regarding land use in relation to environmental noise, and the control of noise sources within the community. Its purpose is to provide a framework within which future planning and noise mitigating decisions will be made and implemented. It is intended to represent the consensus of the community's goals and objectives pertaining to the control of environmental noise.

Specific objectives of the plan include:

- Prevention of further deterioration of the noise environment in existing situations.
- Preclusion of future situations of noise incompatibility by restricting the placement of sensitive uses in noise impacted zones, and preventing the intrusion of noise from new sources into residential zones.
- Application of noise mitigating measures in site development, orientation, and building construction.

Methodology for achievement of the plan objectives is through adoption of:

- Land use sensitivity classification
- Land use noise standards
- Improved zoning, building, and noise ordinances
- A correlated set of implementational guidelines to be applied at the general and specific plan levels.

B. Environmental Setting

The general environmental setting is described in the Land Use Element. The specific setting, as it relates to noise, is typical of the surrounding contiguous communities in the south bay area. Substantially more than half of the total land area is exposed to levels of environmental noise greater than that identified by the Environmental Protection Agency as "requisite to protect public health and welfare with an adequate margin of safety."

From a noise standpoint, the environmental setting is poor, because of dispersed and mixed land uses, and because of non-conforming residential uses in industrial zones. On the other hand, the City is relatively free of severe noise impact from air, freeway, and rail transportation systems.

C. The Environmental Impact of the Proposed Action

The direct environmental impact of the proposed action is the progressive improvement of the noise environment, resulting in improved quality of life. Major indirect impact is added regulation in new uses of land, in site development, and in building construction. The added regulation will increase development and building costs in some instances. These added feature costs are no greater, however, than that currently being incurred by the more knowledgeable and far-sighted developers. The regulations are mandated by State law, and impose minimum standards, with consideration of both quality of life and economics.

The short-term impact of new regulation of land use and minimal added cost will be far outweighed by long-term benefits of quality of life and economic productivity.

D. Adverse Environmental Effects Which Cannot be Avoided if the Proposal is Implemented

The proposed Noise Element does not have any adverse environmental impact. (Regulation of the use of land resources, for environmental improvement, is not considered as constituting an adverse impact.)

E. Mitigation Measures Proposed to Minimize the Impact

The Noise Element would have unacceptable economic impact if its, proposed requirements were made retroactive. To avoid this, existing incompatible situations of land use in relation to noise will be allowed to continue under constraints similar to existing situations of non-conforming land uses in relation to zoning.

In addition, provisions are included for variance in Instances where application of the proposed requirements would cause undue hardship not commensurate with the intended benefits of the Noise Element or not consistent with justice to the individual.

F. Alternatives to the Proposed Action

1. No project. A "no project" alternative would result in progressive deterioration of the City's noise environment, ineligibility for State aid for noise ameliorating measures, and non-compliance with State mandate.

2. More stringent noise standards. The Ldn 65 noise standard proposed for residential and other noise-sensitive land uses is 10 dB higher than that identified by the EPA as "requisite to protect public health and welfare with an adequate margin of safety." The EPA cautions that the criteria "do not take into account cost or feasibility," and that "States and localities will approach this information according to individual needs and situations."

After establishing the present noise contours of the City of Gardena, existing land uses were examined in relation to an Ldn 55 level. Most of the City is impacted by this contour, and the impact is dominated by arterial traffic noise. The attainment of substantially lower ambient levels is not a realistic goal, and accordingly an Ldn 55 criterion would be of little value in land use planning. Instead, land use planning in relation to noise should be directed along practical lines of controlling the placement of sensitive uses, and incorporating noise ameliorating strategy in new developments.

3. Less stringent noise standards. As environmental noise levels increase above Ldn 65, most people will find the environment objectionable for outdoor living and relaxation uses; in fact, as identified by the EPA, the idealized goal is an Ldn 55. The interior level should not be greater than Ldn 45, in consideration of minimum requirements for speech intelligibility, TV listening, and sleep. Since conventional residential construction can provide 20 dB noise attenuation (with windows open just sufficient for ventilation), the criterion is marginally met with an exterior Ldn of 65. A less stringent noise standard would be inconsistent with the objectives of the plan.

G. Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity

Short-term: There will be some instances where the owner of a piece of property will not be able to develop it as planned, or will be subject to new regulation which may add to his costs.

Long-term: The value of present land resources will be enhanced under regulated use, and new property developments will be more desirable, productive and valuable. Quality of life will be improved, and substandard housing situations will be avoided.

H. Irreversible Environmental Changes Which Would be Involved in the Proposed Action
Should it be Implemented

There are no irreversible environmental changes involved.

I. Growth-Inducing Impact of the Proposed Action

The implementation of meaningful, effective, and equitable regulations directed at assuring planned compatibility of residential and industrial land uses with the noise environment will encourage commitment of funds in both these areas by development investors. The Noise Element therefore will have a favorable growth-inducing impact.

J. Organizations and Persons Consulted

This EIR was prepared by the Earth Information Services organization of McDonnell Douglas under contract with the City of Gardena. Noise criteria developed by the Environmental Protection Agency, and by the Department of Housing and Urban Development, have been employed in the development of the Noise Element and its EIR.



CITY OF GARDENA

SEISMIC SAFETY ELEMENT

PREPARED BY

COMMUNITY DEVELOPMENT DEPARTMENT
PLANNING DIVISION
AND
LEIGHTON & ASSOCIATES

ROY T. KATO, CITY PLANNER

STAFF

HARVEY NAPUCK

ADOPTED

MARCH 11, 1975
RESO. NO. 3120

CITY COUNCIL

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PLANNING COMMISSION

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JOE YAMAMOTO

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PART 1
SEISMIC SAFETY ELEMENT OF THE
CITY OF GARDENA

Leighton & Associates

INTRODUCTION

General Overview, Related Elements and Legislation

The Seismic Safety Element, required by state law in 1971 as part of the general plans for all cities and counties in California (Government Code, Section 65302f), embodies the principal geotechnical component of land use planning. This document has been prepared in accordance with the latest guidelines issued by the Council on Intergovernmental Relations in September 1973. The basic objective of the element is to reduce loss of life, injury, damage to property, and economic and social dislocation resulting from future earthquakes, but it is also concerned with slope stability problems (such as landslides and mudslides) and other soil-related hazards. Seismic hazards specifically to be identified and evaluated include susceptibility to surface rupturing from fault movement, ground shaking, related ground failure, and to seismically induced waves (tsunamis or seiches). In addition, for the Gardena General Plan study, the soil-related characteristics of shrink-swell potential, erosion susceptibility, subsidence and hydrocompaction are evaluated as to their land use implications.

The Safety Element, in addition to being concerned with flood hazards, fire prevention and control, and other issues, is concerned with geotechnical hazards generally, including their identification, mapping, and evaluation. Although seismic hazards are considered, the principal geologic hazards addressed in the Safety Element are related to slope instability and soil problems and how they can be avoided or minimized in the planning process. The Seismic Safety Element document contains all of the basic geotechnical data and evaluation for the Safety Element. The Open Space and Recreation Element and the Conservation Element have significant geotechnical inputs also, relating particularly to mineral and soil conservation, preservation of unique geologic features, mineral resource production, and possible open space designation for hazardous geologic conditions.

Other state legislation related to seismic and geologic concerns includes the following:

Public Resources Code

Sections 660-662 and 2621-2625; these sections require the State Geologist to delineate special studies zones encompassing potentially and recently active fault traces (Alquist-Priolo Act).

Sections 2700-2708; require the Division of Mines and Geology to purchase and install strong motion instruments (to measure the effects of future earthquakes) in representative structures and geologic environments throughout the state.

Education Code

Section 15002.1; requires that geological and soil engineering studies be conducted on all new school sites and on existing sites where deemed necessary by the Department of General Services.

Section 15451-15466; these sections require that public schools be designed for the protection of life and property (Field Act).

Health & Safety Code

Section 15000 et seq.; require that geological and engineering studies be conducted on each new hospital or additions affecting the structure of an existing hospital.

Sections 19100-19150; require certain buildings to be constructed to resist lateral forces.

The provisions, intent, and land use implications of the Alquist-Priolo Act will be discussed in greater detail below.

SUMMARY AND CONCLUSIONS

Geotechnical Findings

The City of Gardena and the areas within its sphere of influence are located in the large urban and industrial complex with the City of Los Angeles as its center. In character with this setting, Gardena is almost completely developed with residential, commercial, and some industrial structures. Planning for seismic safety, therefore, will deal chiefly with existing structural hazards and disaster planning and to a lesser extent with control of new development.

The most likely earthquake-generating faults and, therefore, those of greatest concern, are considered to be the San Andreas, San Fernando-Sierra Madre, and Newport-Inglewood. Levels of seismic shaking within the City from significant earthquakes on the first two are expected to be moderate. On the Newport-Inglewood, however, these levels are expected to be relatively high because this fault zone passes very close to Gardena.

Ratings of seismic and geologic hazards within the City of Gardena are summarized as follows:

Seismic shaking Moderate from activity on San Andreas, San Fernando Sierra Madre; relatively intense from activity on Newport-Inglewood. Possible localized intensity amplification effects, especially in areas with uncompacted fill or soft soils. Earthquake intensities equal to or greater than those experienced during the 1933 Long Beach and the 1941 Gardena earthquakes should be anticipated in the future.

Fault Rupture Potential Generally low; relatively higher along the Charnock fault and in the northeast portion of Gardena closest to the Newport-Inglewood fault zone. No differential ground displacements, however, have been found in historic earthquakes associated with this fault zone.

Liquefaction potential Low in northern half of city; relatively higher in southern half.

Tsunamis, seiches, potential inundation because of dam or reservoir failure, other secondary seismic effects..... Very low; remote possibility of local erosion damage and flooding from rupture of water tanks.

Slope instability Very low over almost all of city; low in extreme northeast corner of city on west flank of Rosecrans Hills; very low to possibly moderate where steeper slopes are present in local flood control basins in northwest and southeast parts of city.

Soil-related problems Generally low; areas of expansive soils and uncompacted fill, however, will require appropriate attention for future development.

The existing and inventoried geotechnical data base is considered adequate for the purposes of the present seismic safety study. However, more detailed investigation of certain aspects may be required if and when new development or reconstruction is planned in areas of higher risk.

Impact Assessment

1. The chief geotechnical hazard to the City of Gardena arises out of the nearby presence of the active Newport-Inglewood fault zone. The maximum probable earthquake from this zone can give rise to high intensities (on the Modified Mercalli scale) not only in Gardena, but also over the greater part of the Los Angeles basin. This risk, however, is considered, tolerated or acceptable mainly because evacuation or abatement measures for nearly all existing structures is unnecessary or impractical. Moreover, the risk is ameliorated somewhat by the fact that no surface offset of geologically young deposits has been found associated with the fault zone. This has led to disagreement as to whether or not the Newport-Inglewood fault zone should be designated a special studies zone under the Alquist-Priolo Geologic Hazard Zones Act. The two faults shown on Plate I as passing into and through the City are not considered as great a risk as the proximity of the main fault, first, because they are subsidiary segments of the main Newport-Inglewood zone and, second, because there is some question as to their existence or recency of movement.
2. A second hazard is the existence of a perched water table within about 35 feet of the surface beneath most of the southern half of the City. This results in a relatively higher risk from potential liquefaction, as compared with the remainder of Gardena, in the event of a sufficiently strong earthquake. Because much of this part of the City is already developed, this would be designated a tolerated risk. Abatement measures could consist of installation of drainage systems in critical areas, and fostering public awareness of the risks. New development, especially of important structures, should be carefully sited and controlled, with this hazard in mind. Evidence shows that such perched water tables are widespread but discontinuous throughout the coastal plain and also that their levels fluctuate with the wetness or dryness of the season. This would mean possibly a lesser risk for some localities within the same hazard area and an overall lessening of risk in dry seasons.

3. A hazardous-building abatement program should be pursued with priority given to the area within the liquefaction hazard zones and to the areas within the two suspected fault zones within the city.
4. Although no substantive changes are believed necessary in the present building codes or development regulations as they relate to most ordinary types of construction, special consideration for important or critical-use structures is warranted. The codes and regulations should be reviewed periodically and revised, if necessary, to reflect the current technology and the latest geotechnical data. In addition, every effort should be made to bring nonconforming structures up to code standards.
5. In view of the geologic and seismic hazards affecting Gardena, there appear to be no readily identifiable infrastructural elements, such as major highways, thoroughfares, and utility corridors, which are particularly vulnerable to damage or serious impairment from earthquakes. No special contingency measures for emergency plans, therefore, are considered necessary. Those elements or structures within areas of highest relative liquefaction potential or seismic ground response, however, deserve further evaluation on an individual basis by the responsible agency involved to assess the possible adverse impacts.
6. No dams or reservoirs are close enough to the city to constitute a hazard from seismically induced failure. Two water tanks exist within the city but are not considered seismically or geotechnically unsafe.

In the highly unlikely event of complete collapse during an earthquake, the capacities, locations, and ground slopes are such that, except for the initial surge in the immediate vicinity of the tanks, only minor erosion of exposed soil might take place. If possible, the areas within 100 to 200 feet of the tanks should be kept clear. Routine monitoring of these tanks for leakage on a periodic basis is advisable, particularly after earthquakes.

STATEMENT OF GOALS AND PUBLIC POLICY

Goals

Goals of the Seismic Safety and Safety Element provide a link between the identified problems and issues and the policies and implementation measures which follow. They provide basic guidelines for city decisions related to geotechnical hazards and assets as they affect land-use planning and development standards. The following are recommended major goals for adoption:

1. To protect life, property, and public well being from seismic and other geologic hazards.
2. To reduce or avoid adverse economic, social, and environmental impacts caused by geologic conditions.

Policy

These policies provide a general basis for more specific steps for achieving the stated goals through implementation and action programs. The following are recommended policy statements:

1. To maintain, revise (whenever necessary), and enforce existing standards and criteria to reduce or avoid all levels of seismic or other geologic risk, whether it be unacceptable, tolerated, or avoidable risk.
2. To encourage the reduction of risks associated with hazardous old buildings through action programs including , but not limited to , rehabilitation, occupancy reduction, and selective demolition.
3. To evaluate the compatibility of existing zoning , as well as future land-use allocation, with known geologic risk zones or those which may be identified in the future.

4. To recognize the need to provide greater safety for important or critical-use structures (such as hospitals, schools, public assembly facilities, dams, and utility corridors) through careful site selection, appropriately comprehensive site investigation, and enforcement of applicable codes and regulations.
5. To prohibit development of important or critical-use structures in the areas of highest liquefaction potential and in any active or potentially active fault zones unless no other more suitable site can be located and the site is shown to be safe for the intended use.
6. To advocate improved seismic safety programs for schools and promote greater general public awareness of all types of geotechnical hazards.
7. To improve interjurisdictional cooperation and communication, especially in regard to seismic safety aspects related to dams, reservoirs, state highway and freeway structures, regional fault studies, legislative matters, and disaster response or emergency plans.
8. To advocate improved earthquake insurance programs and seek qualification of the city for federal mudslide and flood insurance.

Risk Definition and Risk Mitigation

In order to evaluate the adequacy of existing codes, regulations, or practices used to reduce or avoid seismic and other geologic hazards, it is necessary to relate and define relative risk levels with specific hazards. The several types of risks discussed and defined, for the purposes of this report, include acceptable, unacceptable, avoidable, and tolerated risk.

Unacceptable Risk. Geologic hazards in this category include those which pose the most serious threat to life, property, or an existing structure, where no permitting or effective regulatory control exists to require abatement of the hazard. An example of such an unacceptable risk might be an old, earthquake-vulnerable hospital located on an active fault. A well-constructed one-story wood frame residence located in an active fault zone but not on a fault trace, on the other hand, would be a less severe risk and also categorized as unacceptable, or perhaps tolerated, depending on the dictates of public policy. A prime example of an unacceptable risk might be an impending landslide about to bury a house or other habitable structure for which there is no regulatory control to prohibit its occupancy. For the most part, such hazards are avoidable risks which can and should be mitigated in the planning or construction stages of development, either by prohibiting construction within the slide (or fault zone) or eliminating the risk by corrective grading or other stabilization measures which may be feasible.

Tolerated and Acceptable Risk. Between the extremes of the risk scale, unacceptable at one end and acceptable at the other, there are all degrees of relative risk. These are less clear-cut situations, such as a suspected slide or a potentially active fault, which may or could pose a threat to existing features or improvements. A similar situation is the possible hazard of liquefaction which underlies a site. Although these may be equally unacceptable risks, such factors as the probability of occurrence at a site and the importance or value of a structure or land use result in gradation in the degree of risk unacceptability. Also, further toward the acceptable risk end of the scale are other presently unrecognized hazards, either because of the lack of information or capability to detect the hazard. Although there appears to be no consensus for the definition of acceptable risk (for the purposes of categorizing the various geotechnical hazards in land-use planning), those considered most unacceptable can be identified and mitigated, if possible, or restricted from future use. Those remaining risks, therefore, are placed in the category of tolerated or acceptable -risk, without any rigid distinction between the two necessary.

Criteria for Decision-Making Related to Risk. The following factors should be considered in evaluating risk.

1. Severity of potential losses. Seismic or other geologic impacts including loss of life, injury, property damage, loss of function, and hidden cost should be considered.
2. Risk reduction capabilities. Consideration should be given to current technological capabilities, available fiscal and manpower resources, and established priorities.
3. Probability of loss. The probability of future seismic or other adverse geologic occurrences should be evaluated in light of their possible effect on structures or human activities.
4. Adequacy of basic data. This is an important factor in estimating the probability of imperceived hazards.

For the most part, there must be reliance upon only very general, qualitative appraisals of these factors, considering the present study scope.

IMPLEMENTATION PROGRAMS

The implementation of any plan is as vital to accomplishing the primary aims as are the identification of hazards and the statement of policies. Following is an integrated set of recommended actions relating to existing programs which may have application and strategy options, major land-use concerns, and specific land-use planning and development control implications.

Existing Programs

The following programs have actual or potential application to the problems identified in this element:

City

- Zoning, Building, and Grading Regulations
- Gardena General Plan and Supporting Elements
- Gardena Disaster Plan

County

- Los Angeles County Seismic Safety and Safety Element, 1974
- Zoning and Building Regulations (pertinent to Gardena sphere of influence)
- Cooperative Mapping Program with California-Division of Mines and Geology and U. S. Geological Survey

State

- Dam Inundation Areas Mapping & Evacuation Plans
- Dam Safety Inspection
- Active Fault Mapping (Alquist-Priolo Hazards Zone Act)
- General Geologic Mapping
- School Safety

Federal and Other

U.S. Geological Survey Mapping and Earthquake Research and Monitoring
Department of Housing and Urban Development - Urban Planning Research Funding
University Research on Geologic Hazards

Hazard Reduction Strategies

Methods of mitigating geologic hazards most often employed fall into three basic categories, as follows:

Hazard Abatement. This is the most positive means of hazard reduction but also is the most controversial since it primarily involves the elimination of an existing hazard, usually at a substantial cost to the owner. Demolition of an old, earthquake-vulnerable building is an example. It can also have significant negative social impact related to possible relocation requirements of the abatement.

Impact Reduction. This strategy addresses measures to minimize the adverse effects of future earthquakes and geologic events on existing and future developments. It can involve reactive efforts, such as emergency or contingency plans after a disaster, or standards up-grading to minimize possible adverse effects.

Hazard Avoidance. Most important at the land-use planning level is the strategy of avoidance. With the advanced knowledge of the various types and severity of hazard within a planning area, those land uses most compatible with the risk can be matched, thereby avoiding unacceptable risk areas or limiting them to the least important land uses.

Setting Priorities

The following criteria should be used to establish priorities so that judgments can be made regarding allocation of limited funds to the most critical areas or problems:

1. Significant and impending threats to human life or safety.
2. Unacceptable levels of potential economic loss.
3. Potential for widespread social disruption.
4. Significant threats to future populations or development.
5. Problems which are not likely to result in adverse impacts.

Implementation Measures

1. Earthquake-Hazardous Old Buildings. Some brick-construction buildings along Western Avenue have been identified as earthquake-hazardous and are now under consideration for rehabilitation and/or condemnation. Action should be taken to identify all such structures in the city and to abate the hazard, either by condemnation and removal or by repair and improvement to acceptable safety levels. Refer to Appendix D, which gives criteria for identifying and evaluating existing structural hazards, and Appendix E, which gives a sample checklist form that could be used for a hazardous building survey.

If the building survey reveals existence of significant risk from falling structural elements such as parapets, canopies, unreinforced walls or chimneys, adoption of an appropriate ordinance should be considered to eliminate such hazards or to require the necessary corrective work be done.

3. Survey of Existing Important Structures. A comprehensive survey should also be made of fire stations and all older public or private buildings that are essential to relief and emergency operations after a disaster, to determine if remedial measures are required to assure their continued functioning following a strong earthquake. All three hospitals and one of the two fire stations lie outside the zone of relatively potential liquefaction hazard; the civic center, police station, and the second fire station lie within it but near its boundary. The liquefaction

hazard in the area of the civic center is considered much lower than in the central, topographically lower area of the hazard zone. Although individual sites or facilities were not specifically evaluated for this study, further investigation regarding their compliance with current structural standards for a seismic design should be considered in order to verify their apparent safety.

3. Geotechnical Investigation Requirements for Construction of Important Structures. Detailed geologic/seismic and soil engineering reports 'not presently required by the City Building Code should be required for the following types of facilities in all seismic zones:

Facilities Vital in Emergencies

- a. Hospitals and other medical facilities having surgery or other emergency treatment areas.
- b. Fire and police stations.
- c. Municipal government disaster operation centers.
- d. Municipal government and other communications centers deemed to be vital in emergencies.

The foregoing are considered buildings or structures which must be safe and usable for emergency purposes after an earthquake in order to preserve the peace, health, and safety of the general public and therefore deserve greater care in site evaluation and more conservative design than for ordinary construction. Investigation and a seismic design requirements for these facilities could be implemented by adopting an ordinance similar to Los Angeles County Ordinance No. 1.0717, which amended the Building Code for those reasons.

Also recommended for consideration are the following types of facilities which should also be included in the group requiring detailed reports and special design considerations:

Other Important Structures

- a. Critical-use facilities; power intertie systems, linear and other major infrastructure systems, plants manufacturing or storing explosives, toxic, or highly flammable products.
 - b. High-cost facilities; certain public facilities involving expenditure of large sums of money. A suggested criterion for determining a high-cost facility is one having a total building expenditure of \$1,000,000 or more.
 - c. High-occupancy facilities; any building having building occupancy levels that are considered critical from a seismic safety standpoint. A suggested occupancy level in excess of 400,000 man-hours per year is suggested as a criterion.
4. A seismic Design Considerations for New Construction. Conformance with the 1973 Uniform Building Code is considered adequate for most ordinary types of construction. At the discretion of the Building Official, certain of the more important, vital or critical-use structures (discussed above) should be specified as requiring the more conservative seismic design parameters based on the maximum credible earthquake rather than the maximum probable earthquake. Other, less important uses, such as certain utilities and roads, could be designed based on the maximum probable earthquake, as are the ordinary types of construction.

Determination of the seismic design parameters for the maximum credible earthquake will require independently derived data based on specific site conditions and the type of construction proposed. A design response spectrum or criteria set forth in the Uniform

Building Code (as supplemented by the April 1974 recommended revisions) should be required as a basis for a seismic design. The latest U.B.C. criteria provide for importance factors for various building types to be applied in the design. Inclusion of these factors should be required if the U.B.C. is utilized for design.

5. Fault and Other Seismic hazards Related to New Construction. With regard to liquefaction and fault rupture hazards in future development, specific analysis of the liquefaction hazard appears warranted only for residential tract development, high-cost facilities, and important or critical-use structures located in the potential liquefaction zone.

As yet, faults shown on Plate I do not come under the jurisdiction of the State Alquist-Priolo Act provisions, which determine investigation standards and setback requirements. It is our understanding that the Newport-Inglewood fault zone is to be officially delineated under the provisions of the Act within the next fiscal year. Informed sources indicate, however, that because of the nature of this particular fault zone it may not be feasible or practical to delineate the zone.

At the discretion of the Building Official, all development (or only certain of the more important land uses) within the two fault zones identified in Gardena could be required to comply with the State requirements for the evaluation of the ground rupture hazard associated with active or potentially active faults. The State criteria prohibit construction of habitable structures across such potentially active faults (or multiple fault lines within the zone) and require a minimum setback of 50 feet from such faults unless specifically approved by a registered geologist. With the present knowledge and tinder the current circumstances, implementation of this option by the Building Official is considered unnecessary.

6. Existing Structures or Improvements Within Fault Zones in the City). Although the unnamed and Charnock faults are shown on Plate I as possibly active, no evacuation or special abatement measures are recommended for structures within these zones. This is primarily because of uncertainty as to the relative degree of ground rupture hazard within the zones, as compared to that outside of them. Both are considered part of the active Newport-Inglewood zone, and both may have associated with them epicenter-, of historical low magnitude (3+) earthquakes. However, the unnamed fault is shown by only one source, is postulated on the basis of topography alone, and is shown as questionable. The Charnock fault, present only, in the subsurface, is considered active by some sources and as potentially active, at most, by others. These two faults are, therefore, classified as possibly active on Plate I more for reasons of conservatism and safety than on the basis of established risk. However, all property, owners within the zones should be made aware of the potential risk, and any new construction of critical facilities should be outside of these zones, if possible.
7. High-Rise Structures. The seismic problems related to high-rise structures are primarily evacuation procedures and fire control. This category of problem is not a major one in the City, of Gardena. Gardena is largely a residential community with one- and two-story, family and, increasingly in recent years, multiple-family dwellings together occupying more than half the total acreage. However, the seven-story, Gardena Memorial Hospital, the tallest building in the city, is not only high-rise (defined in Gardena as 5 or more stories) but is a vital facility as well. For this reason, it and other multiple-story, structures higher than 3 stories should be reviewed with evacuation and fire control considerations in mind.
8. Dam, Reservoir, and Water Tank Safety. No dams or reservoirs are near enough to Gardena to be a seismic hazard. Two water tanks are maintained within the city by the Southern California Water Company. Since they are filled every night, according to the Company, risk

evaluation should be based on full tank capacity. The Southern District tank, at 13St Street and Vermont Avenue, is an old one, of concrete construction, with a capacity of 190,000 gallons. In the event of tank rupture, the flow would be westerly toward the Dominguez Channel. In this area the topography is nearly flat and the slopes gentle, so that the water would spread widely and travel at relatively low velocity. The Dalton tank, at Dalton Avenue and Artesia Boulevard, is a newer one, also of concrete, with a capacity of 2,000,000 gallons. However, more than half of the volume is below ground, so that less than 1,000,000 gallons would be released in a worst-case rupture. The flow, in this event, would be into the Dominguez Channel, both directly and through the nearby flood-control basin in South Gardena Park. In both cases, except for the initial surge in the immediate vicinity of the tanks, the maximum damage that might be expected is minor erosion of exposed soil. To guard against the surge damage, it is recommended that the area within 100 feet of the Southern District tank and within 200 feet of the Dalton tank be kept clear of dwellings and critical structures. It is also recommended that the structural integrity of the tanks be monitored periodically, particularly after earthquakes.

9. Schools. The 1933 Field Act established minimum earthquake safety standards for school construction. Legislation passed in 1968 and recently modified prohibits the use of seismically hazardous school facilities after 1977. Information from the Los Angeles Unified School District states that the high school (just outside the city limits but considered within the area of influence) and five elementary schools have only post-1933 buildings and comply fully with the Field Act. The junior high school, after structural strengthening of one building, is expected to be in compliance by the time this is written. The remaining two elementary schools are scheduled to be in compliance by the end of June, 1975, with respect to used and occupied buildings (in the case of one of these, the main building, closed in 1972, will be strengthened or replaced eventually,

depending upon the recommendation of an architectural study now in progress). Five private schools are also located inside the city limits. The distribution of schools, both public and private, within the city is such that some are inside and some are outside the zone of potential liquefaction hazard. It is recommended that the Board of Trustees and the Administration of the Los Angeles Unified School District be made aware of the results of this study, since authority for taking any corrective or preventive action in the public schools lies with them. In the case of the private schools, the city should monitor the compliance of buildings with both Field Act and city building code seismic safety requirements. Any proposed new school construction may require special geologic seismic and soil engineering investigation of the site to evaluate the geotechnical hazard, as provided for under the State Education Code.

10. Evaluation of Industries or Facilities Susceptible to Seismically Caused Accidents. If determined necessary, the city should adopt an ordinance defining hazardous industries or types of facilities susceptible to potentially serious accidents resulting from seismic activity. Appropriate authority to inspect such facilities and to enforce any adopted regulations or standards should also be enacted. It will be necessary to obtain authorization to provide staff and funding necessary to enable the appropriate city agency to conduct a survey to evaluate potential hazards and to recommend guidelines or procedures for safe handling, processing, manufacture, or storage of dangerous materials.
11. Disaster Planning. The City of Gardena should update its 1966 Disaster Plan to provide for the following procedures whenever a significant earthquake occurs:
 - a. Mobilization of rescue, medical, communication, and other personnel and facilities.
 - b. Designation of key people, their responsibilities, and channels of direction.

- c. Evacuation and rescue operations.
- d. Emergency food, water, and medical supplies.
- e. Emergency shelter for evacuees.
- f. Repair and restoration of utilities and other essential services.
- g. Cleanup of hazardous debris.
- h. Inspection of vital and other structures to determine whether or not they are safe to reoccupy.
- i. Protection of property, prevention of lawlessness under conditions of physical and social stress.
- j. Communication of information to public to maintain public order.
- k. Other aspects that may be of particular or unique application to the City of Gardena.

Because the greatest geologic hazard to Gardena is from activity on the Newport-Inglewood fault zone, and because estimates show a large earthquake on this fault zone would severely affect a wide area in all directions from Gardena, it is recommended that the City consult with other cities in this area to draw up a regional plan for mutual assistance. This could provide for most efficient use of emergency resources in mitigating the effects of a large earthquake.

It is also recommended that a program of public education and awareness regarding the seismic hazard be instituted so as to allow the individual citizen to react most sensibly in such an emergency. Refer to Appendix F for an example guide which could be distributed to the public.

12. Review and Revision. The city should review the Seismic Safety Element at least every five years in order to incorporate the results of new knowledge, to revise and improve existing provisions, and to eliminate provisions that may be outdated.

GEOTECHNICAL REPORT - PART 2

Leighton & Associates

INTRODUCTION

Authorization and Scope of Investigation

As authorized by the City of Gardena under an Agreement, dated September 17, 1974, we have prepared the Seismic Safety Element of the General Plan and have provided the geotechnical input for the Safety Element. This report was prepared in accordance with the latest State guidelines issued by the Council on Intergovernmental Relations, dated September 20, 1973. The following activities are included within the scope of the study:

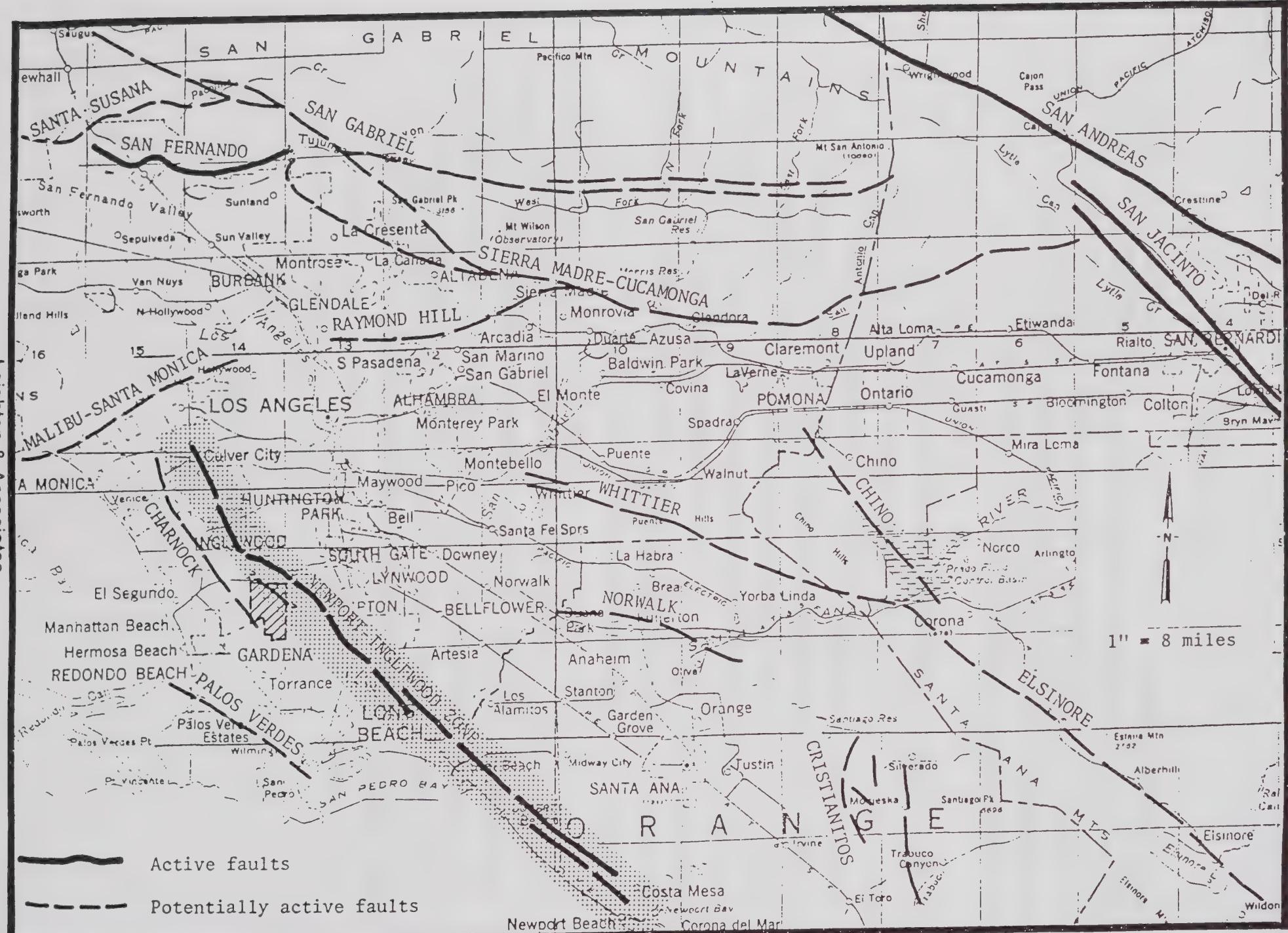
1. A comprehensive inventory and review of pertinent earthscience data, primarily from published reports and case histories in our files.
2. Interviews and personal communication with representatives of City, County, State and Federal agencies regarding problem areas and status of other current related studies being conducted at various levels of government.
3. Stereoscopic study of aerial photographs of the City and surrounding areas from the Fairchild collection and other sources.
4. General field reconnaissance and inspection of problem areas.
5. Analysis of soil and groundwater data from boring and well logs.
6. Evaluation of seismic, slope-stability, and other geotechnical hazards as they affect existing and future development.
7. Preparation of a Map of Geology, Topography, Hazards, and Important Structures and Facilities (Plate I) and a Land Use Capability Map (Plate II), among other illustrations, to assist in land use planning.
8. Preparation of the Seismic Safety Element document which recommends seismic safety goals, aims, and policy statements to reduce or minimize geologic risks and provides implementation guidelines to carry out the stated goals.

Regional and Historical Setting

The City of Gardena lies within the western part of the Los Angeles basin coastal plain, about 13 miles south of the Los Angeles civic center (Figure 1). At the turn of the century, the region was a sparsely populated, rich agricultural area, but with the great influx of population following the two World Wars the area became highly urbanized and industrialized.

The City of Gardena was founded in 1930 with the consolidation of the towns of Gardena, Moneta, Western City, and Strawberry Park. From an initial area of a little less than 3 square miles it grew, through annexation of various parcels, to an area of 5 1/4 square miles. As of the date this is written, the Norman Precinct, in the southeast corner of the city, has just voted to annex to the city, and the city planners anticipate that the remaining three indentations in the western boundary will eventually become part of the city. This would provide an ultimate area of 6 square miles and would increase the present population of over 46,000 to about 53,000. Further area growth would be prevented by the established city boundaries of the neighboring communities of Los Angeles, Hawthorne, Lawndale, Torrance, and Carson.

Originally a small agricultural community, specializing in nursery stocks, Gardena followed the growth trend of the rest of the region and is today largely a residential community. Less than 1% of the acreage remains as nursery land; over 50% is in single-family and multiple-family dwellings, over 20% in industrial and commercial uses, and the remainder is in public and public right-of-way uses. Only 4% is in available vacant land (City of Gardena Planning Division, 1973).



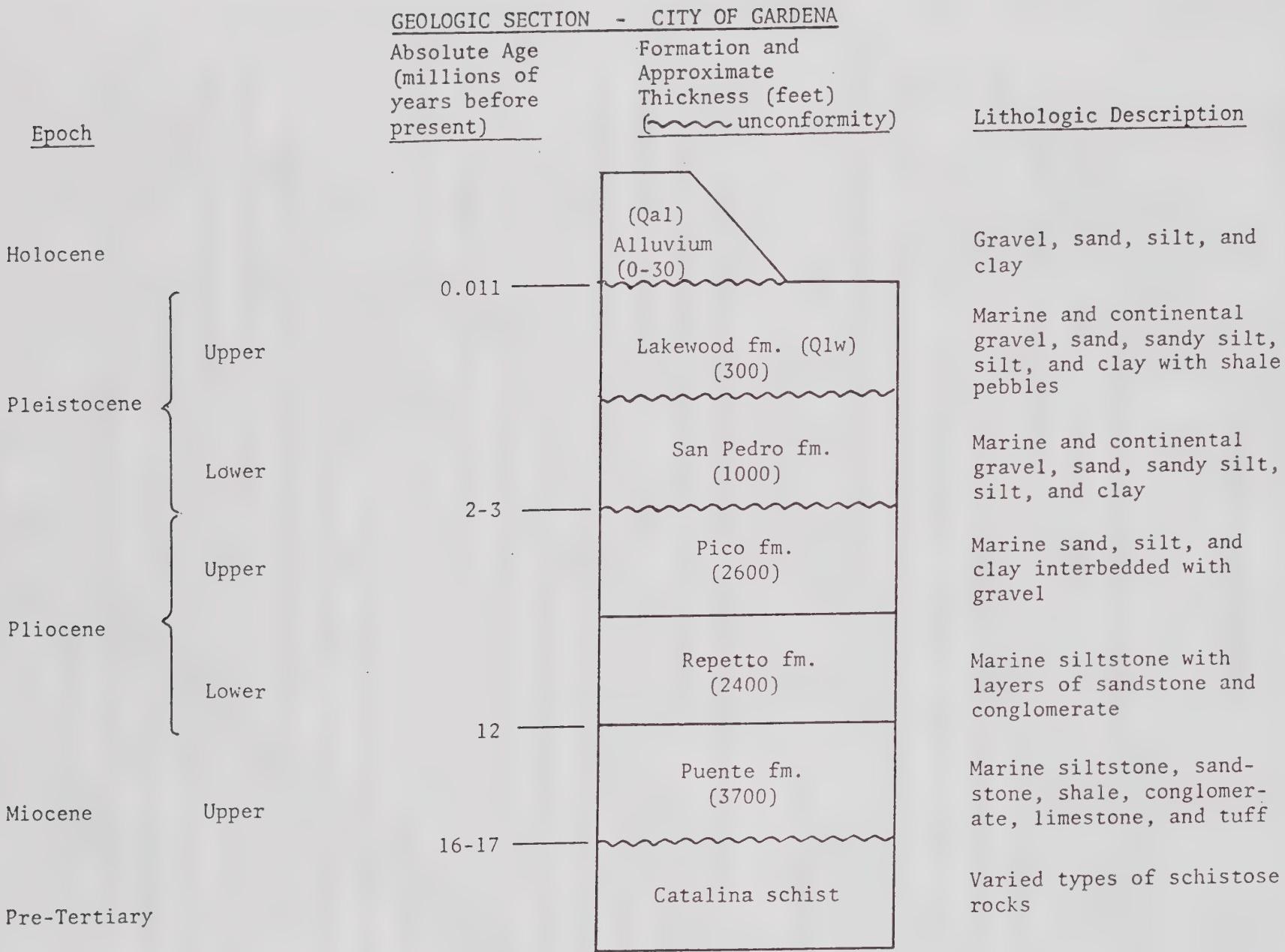
SEISMIC INDEX MAP OF LOS ANGELES BASIN

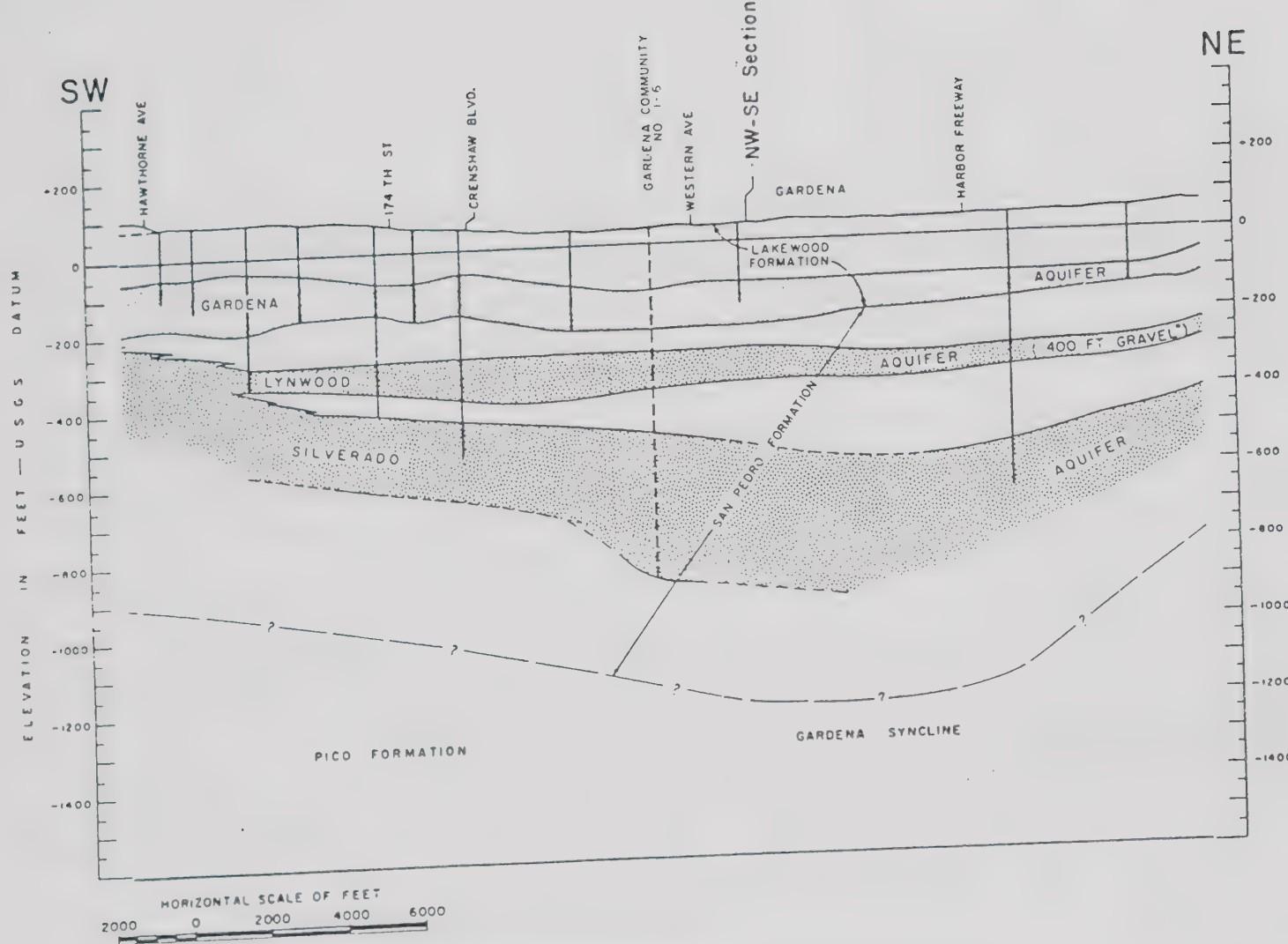
GEOLOGIC SETTING

Regional Geology and History

The Los Angeles basin is a northwest-trending alluviated lowland plain about 50 miles long and 20 miles wide, bounded by the Transverse Ranges on the north, the Peninsular Ranges on the east, and the Pacific Ocean on the south and west. The physiographic basin is underlain by a deep structural depression, parts of which have been the sites of discontinuous deposition since late Cretaceous time and of continuous subsidence and deposition since middle Miocene time. The basin has been divided into four structural blocks, the contacts of which are zones of faulting and flexure on which vertical and lateral movement has occurred intermittently since middle Miocene time (Yerkes, et al., 1965).

Gardena is located in the southwestern block, the westernmost of the four, which is separated from the others by the Newport-Inglewood fault system or zone of deformation. In this block marine deposition began upon a basement of metamorphic rocks in the middle or upper Miocene time, depending upon the locality and, with the accelerated subsidence of the basin, continued into upper Pliocene time. Toward the end of the Pliocene, tectonic activity caused uplift of the border areas of the basin, and some areas along the Newport-Inglewood zone were also exposed or were above wave base. Marine deposition and tectonic activity continued into the Pleistocene, with anticlines growing along the Newport-Inglewood zone during early Pleistocene time and becoming exposed with distinct topographic expression by late Pleistocene time. Toward the end of the Pleistocene, the successive lowerings of sea level caused entrenchment of the upper Pleistocene deposits by the rivers flowing across the coastal plain. With the rise of sea level that began the Holocene, these entrenched channels were filled with alluvial deposits (Yerkes, et al., 1965). The geologic section for the Gardena area, showing the formation names, lithologic types, ages, and thickness, is shown in Figure 2. The cross-sections of Figures 3 and 4 show the structural configuration of the Gardena syncline as it is expressed in the Pleistocene and Holocene deposits underlying the City of Gardena.

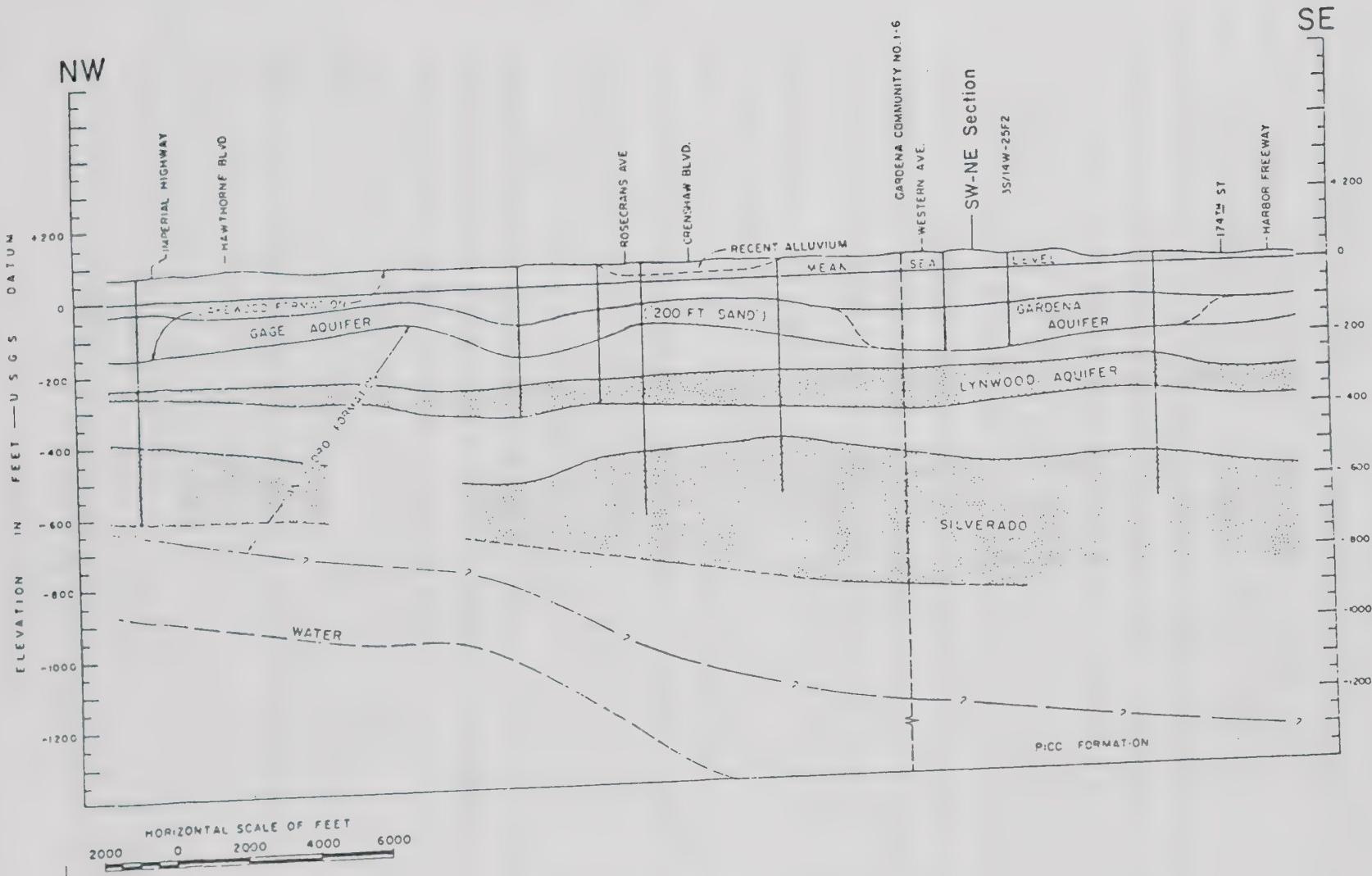




SW-NE GEOLOGIC SECTION ACROSS CITY OF GARDENA

Water (|) and Oil (- -) Wells

(from DWR, Bulletin 104, 1961)



NW-SE GEOLOGIC SECTION ACROSS CITY OF GARDENA

Water (|) and Oil (||) Wells

(from DWR, Bulletin 104, 1961)

Faults and Fault Classification

The major faults and fault systems, both active and potentially active, that have a bearing on the seismic risk to the City of Gardena are shown in Figure 1. The classification of active and (a third class, inactive, is omitted from the map) follows the generally accepted criteria adopted by the State Mining and Geology Board pursuant to the requirements of State legislation delineating special studies zones along active faults (Alquist-Priolo Act). Thus, an active fault is one along which movement has occurred within about the last 11,000 years (Holocene time) or which has been the source of historic earthquakes. If movement has occurred during the last 2 to 3 million years (Pleistocene time) but not proven to have occurred within the last 11,000 years, the fault is considered to be potentially active. Any fault older than Pleistocene (one which does not displace rocks 2 to 3 million years old or younger) is considered inactive. Only in rare instances are data available that permit the age-dating of the latest movement so that many faults which are in fact active are necessarily classified as potentially active.

Under the Alquist-Priolo Geologic Hazard Zones Act, the State Geologist is required to delineate special studies zones at least one-quarter mile wide encompassing certain designated faults and all other faults or segments of faults he considers sufficiently active and well--defined as to constitute a potential hazard to structures from surface faulting or fault creep. Any proposed new development or structure for human occupancy is required to conform to policies and criteria established by the State Mining and Geology Board and the findings of the State Geologist. Among the criteria developed by the Board, in addition to the classification of activity described above, is a prohibition against placing any structure for human occupancy across the trace of an active fault. Moreover , this prohibition also applies to the area within 50 feet of the fault unless appropriate geologic investigation proves the area not to be underlain by active branches of that fault.

The effect of the Alquist-Priolo Act and the Board criteria on fault hazard analysis in and near the City of Gardena will be considered in the following discussion of the individual active faults.

Newport-Inglewood Fault Zone. From the standpoint of hazard to the City of Gardena, this is the most important of all the faults shown on Figure 1, chiefly because it lies so close to the city. The Inglewood fault, one of its segments, is present in the subsurface of the Rosecrans oil field just 0.3 mile from the northeast corner of the city at its closest point (Foster, 1954). The zone is one of discontinuous folds and faults which extends across the Los Angeles basin in a northwest-southeast direction from Beverly Hills to Newport Beach. Yerkes, *et al.* (1965) state that the zone is a boundary between the eastern and western basement types in the Los Angeles basin, and that displacements are about 4,000 feet at the basement surface, 1,000 feet in Pliocene strata, and 200 feet at the base of the Pleistocene. This would suggest recurring activity throughout most or all of that part of the Tertiary represented by deposits in the Gardena area. On the other hand, displacements are not known in the surface sediments. Barrows (personal communication) states this is because the sediments respond by folding; in the subsurface of oil fields, small-scale faulting is generally found associated with the folding. Because of this absence of surface displacement, the Newport-Inglewood is commonly called a zone of deformation rather than a well-defined fault zone.

The Newport-Inglewood is considered an active fault system because of the arching and erosion of geologically young strata in the series of hills along the zone (Baldwin, Rosecrans, Dominguez, and others) and because of the many earthquake epicenters associated with it, including that of the destructive Long Beach earthquake of 1933. Some communities are urging its being designated a special studies zone under the Alquist Priolo Act, but others are opposing this on the basis of the fact that the absence of surface displacement places the fault zone outside the strict definition given in the Act.

Unnamed Fault, Newport-Inglewood Zone. This fault, one of the two that lie within the City of Gardena (Plate I), is shown in only one source (Wentworth, *et al.*, 1970) and in a later edition by the same team of authors (Ziony, *et al.*, 1974). In both cases it is postulated on the basis of

topographic evidence and in both cases its existence is indicated to be uncertain. According to Barrows (personal communication), a series of shallow, aligned depressions is reported to have been detectable along the base of the Rosecrans Hills and this, too, may have been considered evidence for the presence of the fault. If it does exist, it must be considered active because of its young age and its obvious association with the Newport-Inglewood zone. For this reason, a one-quarter-mile zone has been drawn along it on Plate I to conform to the Alquist-Priolo criteria. Its questionable existence tends to reduce the estimate of the hazard that might be associated with it, but it is placed on the map for reasons of conservatism and safety.

Charnock Fault. This is the second of the two faults that lie within the City of Gardena. It extends northwestward from Gardena to within a mile or two south of the Malibu-Santa Monica fault (Plate I, Figure 1). The fault does not cut the surface but is postulated on the basis of a discontinuity in ground water levels (Barrows, personal communication). Because it affects lower Pleistocene but not upper Pleistocene aquifers (State of California Department of Water Resources, 1961; Wentworth, *et al.*, 1970; Los Angeles County Flood Control District, 1973; Ziony, *et al.*, 1974), it is classed as potentially active. However, on the basis of age, directional trend, and proximity relations, it can be properly considered a part of the Newport-Inglewood zone and may, therefore, possibly be active. The northern segment is shown as active in the Los Angeles County Seismic Safety Element (1974). In addition, some of the many earthquake epicenters associated with the Newport-Inglewood zone appear to fall on or near the mapped position of the Charnock. For these reasons, the fault is designated as potentially active, possibly active on Plate I, again for purposes of conservatism and safety, and a one-quarter-mile zone has been shown along it to conform to Alquist-Priolo criteria.

San Andreas Fault. This well-known fault, or fault zone, is the dominant one in the State of California, extending from offshore of the San Francisco Bay area southeasterly to the Salton Sea area, almost to the Mexican border.

Evidence indicates it has been active throughout the Cenozoic period and it has been the source of historic earthquakes of the largest known magnitude in the State, the Fort Tejon earthquake of 1857 (magnitude about 7.5-8.5) and the San Francisco earthquake of 1906 (magnitude 8.3). Despite the distance of the fault from the City of Gardena, the large possible magnitude of a future San Andreas earthquake requires that it be considered in a seismic safety plan.

San Jacinto Fault. This fault parallels the southern portion of the San Andreas Fault, extending from Cajon Pass to the Mexican border. The San Jacinto Fault was the source of the damaging 1918 San Jacinto-Hemet earthquake (magnitude 5.3) and the Imperial Valley earthquake of 1940 (magnitude 7.1). Although the San Jacinto Fault does not have as much potential for producing a damaging earthquake as the San Andreas Fault, it will have an impact on the City of Gardena and must be considered in a seismic safety plan.

San Fernando Fault. This appears to be an extension of the Sierra Madre Cucamonga Fault, shown as potentially active on Figure 1. The San Fernando was found to be a new surface break after the 1971 San Fernando earthquake and is considered the source of that strong and destructive event. It obviously must be deemed active and, because of its distance-magnitude relations, must be considered in a seismic safety plan for the City of Gardena.

GEOTECHNICAL HAZARD ANALYSIS: SEISMIC

For the purposes of this investigation, the geotechnical hazards are divided into two major groups, seismic and non-seismic, and include the following categories:

SEISMIC

1. Primary

- a. Ground rupture caused by fault movement
- b. Seismic shaking

2. Secondary

- a. Liquefaction
- b. Seismically-induced settlement and landslides.
- c. Seiches.
- d. Potential inundation due to dam or Reservoir failure.

NON-SEISMIC

1. Slope Instability

- a. Landslides.
- b. Mudslides, erosion and other shallow slope failures.
- c. Slide-prone formations.

2. Soil-Related Hazards

- a. Expansive soil.
- b. Settlement.
- c. Subsidence.
- d. Hydrocompaction.

3. Other Problems

- a. Shallow groundwater.
- b. See page.

In this section the seismic or earthquake hazards are considered. The non seismic hazards are considered in the section that follows.

Regional Seismicity and Earthquake 11 story

It is acknowledged that California, with its many active faults, is one of the most earthquake-prone regions of the United States. In the southern California area alone, several hundred earthquakes in the range from about 1 to 6 Richter magnitude have been recorded since measuring instruments were installed. A list of prominent earthquakes in California since 1769 is presented in Table 1. Locations of epicenters for earthquakes of magnitude 6 or greater are shown on Figure 5; an index map showing epicenter locations of earthquakes of magnitude 4 or greater is given in Figure 6.

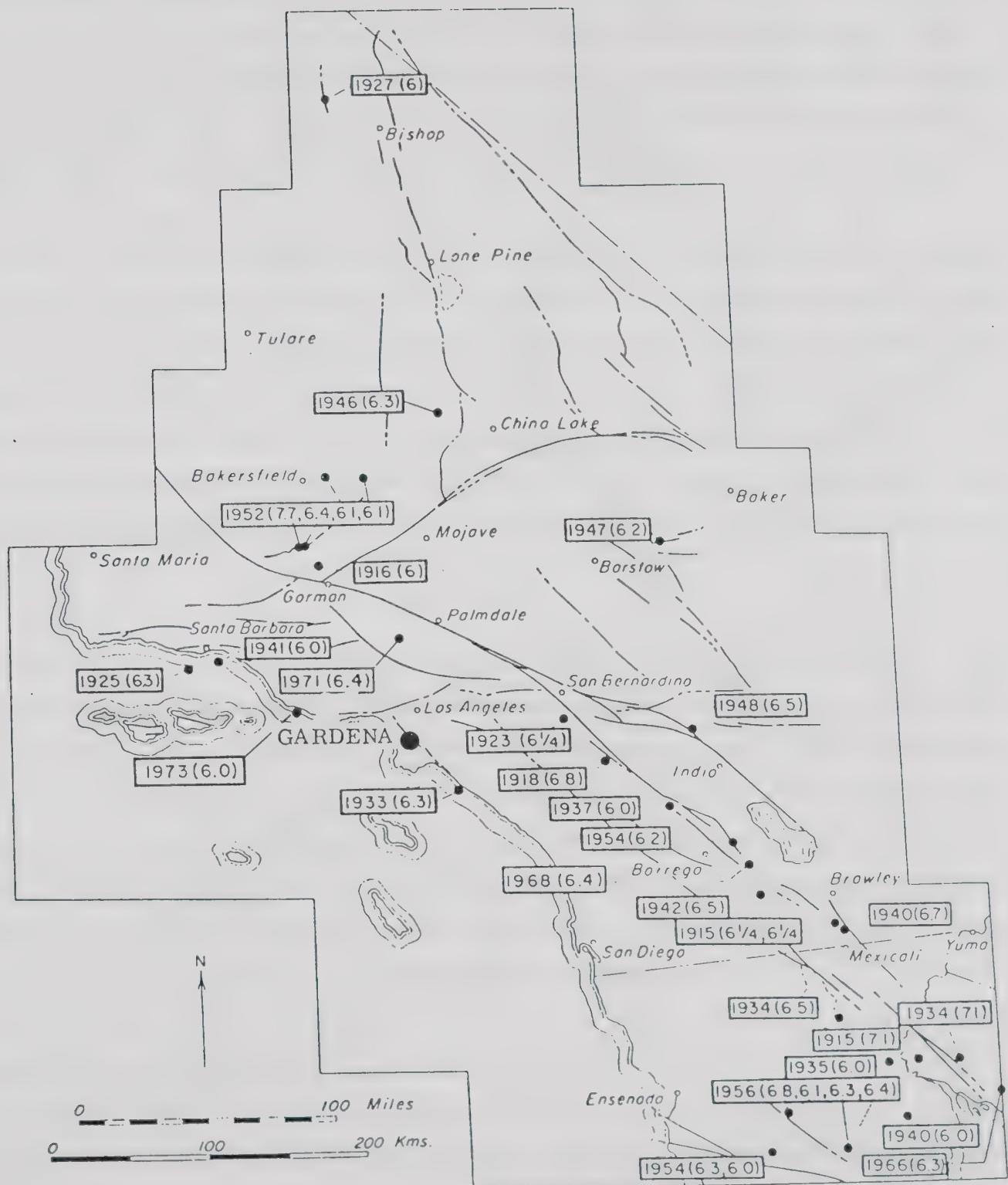
DUE TO AN ERROR IN NUMBERING
PAGES FOR THE SEISMIC ELEMENT,
PAGE NUMBER 33 WAS OMITTED.

Table 1

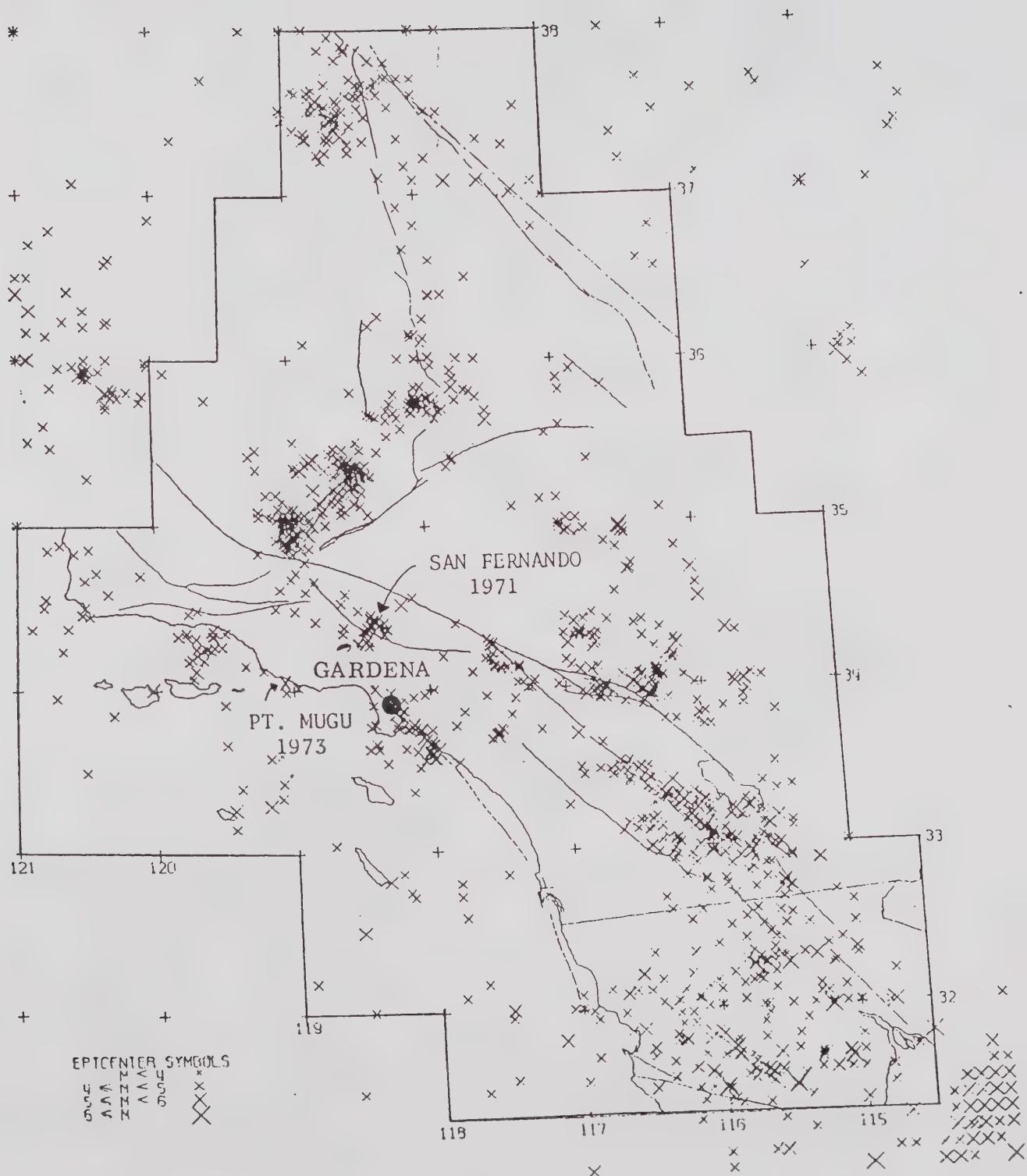
Prominent earthquakes in California, 1769 through September 1971
 (Intensity VIII and above)

Date	Region	Richter Magnitude	Modified Mercalli Intensity
28	Jul 1769	Los Angeles region	*
8	Dec 1812	Southern California	VIII-IX
21	Dec	Off coast of southern California	X
10	Jun 1836	San Francisco Bay	IX-X
	Jun 1838	San Francisco region	X
10 or			
11	Jul 1855	Los Angeles County	VIII
9	Jan 1857	Near Fort Tejon	Possibly 8 ..
26	Nov 1858	San Jose	VIII
12	Nov 1860	Humboldt Bay	VIII
3	Jul 1861	Near Livermore	VIII
1	Oct 1865	Fort Humboldt-Eureka area	VIII-IX
8	Oct	Santa Cruz Mountains	VIII-IX
21	Oct 1868	Hayward	IX-X
26	Mar 1872	Near Lone Pine	Possibly 8 ..
19	Apr 1892	Vacaville	IX
21	Apr	Winters	IX
4	Apr 1893	Northwest of Los Angeles	VIII-IX
20	Jun 1897	Near Hollister	VIII
14	Apr 1898	Mendocino area	VIII-IX
22	Jul 1899	San Bernardino County	VIII
25	Dec	San Jacinto-Hemet area	IX
27 &			
31	Jul 1902	Santa Barbara County	VIII
18	Apr 1906	San Francisco region	8.3
18	Apr	Brawley, Imperial Valley	6 to 6.9
28	Oct 1909	Humboldt County	6+
11	Jan 1915	Los Alamos	VIII
22	Jun	El Centro-Calexico-Mexicali area	6.25
21	Apr 1918	San Jacinto-Hemet area	6.8
21	Jun 1920	Inglewood	VIII
10	Mar 1922	Cholame Valley	6.5
29	Jun 1925	Santa Barbara area	6.3
22	Oct 1926	Monterey Bay	6 to 6.9
20	Aug 1927	Humboldt Bay	VIII
4	Nov	West of Point Arguello	7.5
25	Feb 1930	Westmorland	5.0
1	Mar	Brawley	4.5
6	Jun 1932	Humboldt County	6.4
10	Mar 1933	Near Long Beach	6.3
7	Jun 1934	Parkfield	6.0
18	May 1940	Imperial Valley	7.1
30	Jun 1941	Santa Barbara-Carpinteria area	5.9
15	Mar 1946	North of Walker Pass	6.25
29	Jul 1950	Imperial Valley	5.5
21	Jul 1952	Kern County	7.7
22	Aug	Bakersfield	5.8
25	Apr 1954	East of Watsonville	5.25
21	Dec	Eureka	6.6
8	Apr 1968	Northeast San Diego County	6.5
1	Oct 1969	Santa Rosa	5.7
9	Feb 1971	San Fernando	VII-VIII
			VIII-XI

* The Richter magnitude scale was not devised until 1931. If values appear in this column for earthquakes which occurred prior to that date, the magnitudes were determined as follows: 1) If given to the nearest tenth, the records of older instruments were correlated with records of instruments now in use; 2) otherwise, historical records of intensity were used to estimate magnitude.



Earthquakes of magnitude 6.0 and greater in the southern California region, 1912-1972, modified from Hileman, et al (1973)



1932 THROUGH 1972. EVENTS EQUAL TO OR GREATER THAN MAGNITUDE 4
Modified from Hileman, et al, (1973)

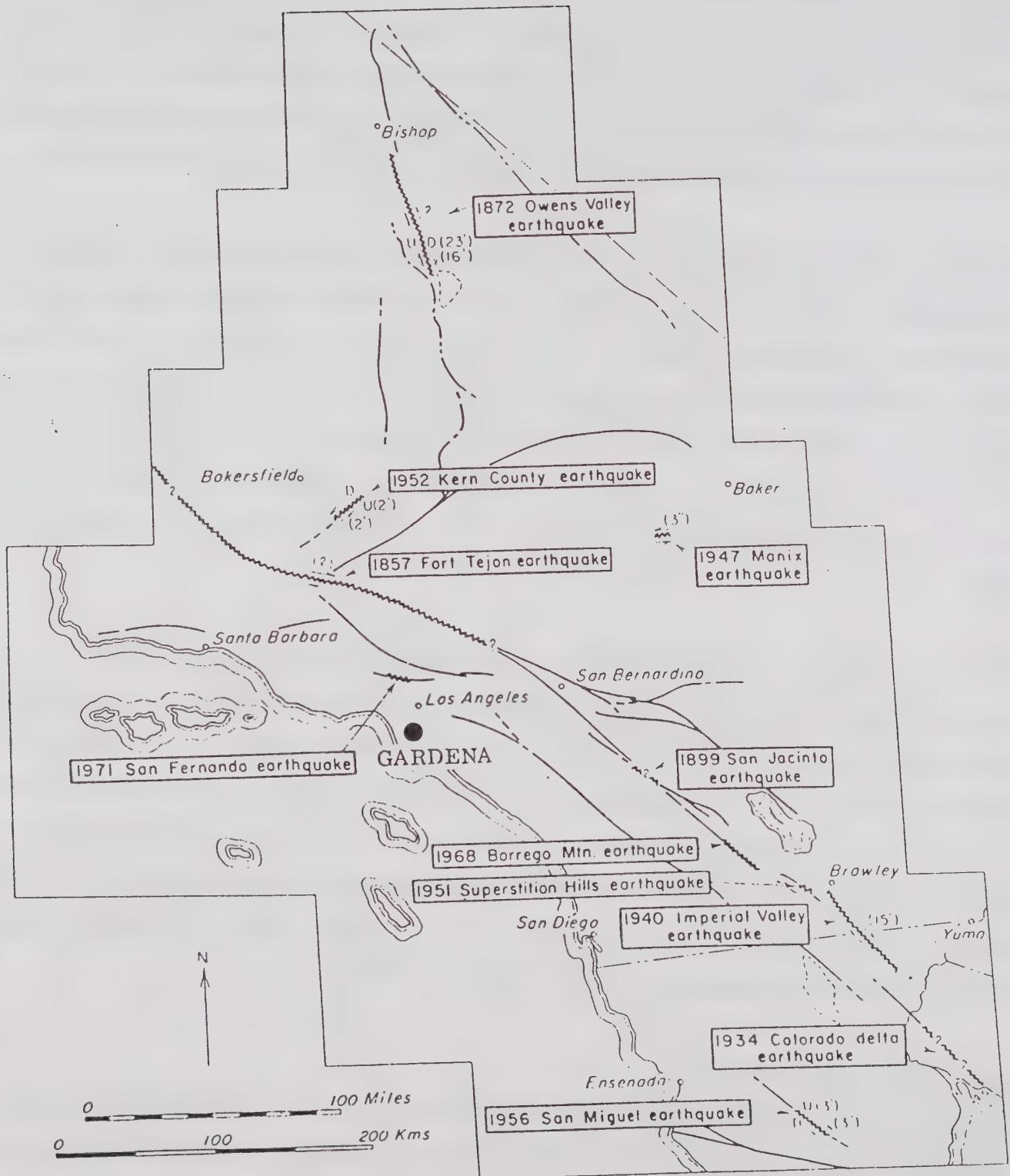
Earthquake activity of significant effect in the Gardena area has been associated chiefly with the Newport-Inglewood zone and, with a few exceptions, has involved earthquakes of magnitudes less than S. Of the exceptions, the Long Beach earthquake of March 10, 1933, was the strongest (magnitude 6.3) but caused only moderate damage to some Gardena stores. The magnitude 5.4 Signal Hill earthquake on October 2 of the same year produced only moderate damage, of which none is recorded to have occurred in Gardena.

On October 21, 1941, the magnitude 4.9 Gardena earthquake occurred, causing the greatest damage in the West Dominguez oil field east of Gardena where almost all of the wells went off production temporarily and a small number required redrilling. In Gardena itself, damage was estimated at \$10,000. Many buildings were cracked, several large plate-glass windows and many small ones were broken, and merchandise stocks were damaged. Private residences were rocked, and furniture slid out of place. Some lights and telephones were out for a short time. In Moneta, the fire walls on one building were thrown down and small cracks appeared in the walls of the nearby post-office building. Some chimneys were cracked.

Less than a month later, on November 14, 1941, the Torrance-Gardena earthquake of magnitude 5.4, took place, causing many broken windows, loosening of bricks from walls and cornices, severely damaging the Bank of America building, and collapsing the roof of a nearby newspaper building. Two buildings and an elementary school building were condemned. One of the smaller buildings of the high school was damaged. There was considerable damage in Moneta, chiefly from collapsing walls and broken and collapsing chimneys. It was observed that most newer buildings and those designed and built to resist earthquake forces, including most schools, suffered little or no damage. Many of the damaged buildings showed that failure was due either to poor workmanship, poor design, or both.

Ground Rupture and Displacement

The hazard of damage caused by ground displacement from fault movement is generally associated only with large earthquakes on major faults. Figure 7 shows historic fault breaks associated with larger regional earthquakes.



Historic fault breaks and associated earthquakes in the southern California region, modified from Hileman, et al (1973)

In the case of Gardena, dominated as it is by the Newport-Inglewood zone, on which activity does not appear to cause surface rupture, it would seem that the ground rupture and displacement risk is comparatively low. On the other hand, there can be no guarantee that future strong earthquakes will not cause rupture, whether they originate on the Newport-Inglewood or on other active faults. For this reason, the two one-quarter-mile wide strips along the faults shown on Plate I should be carefully considered in land-use planning despite the questionable existence or activity of these faults and despite the fact that the Alquist-Priolo Act criteria do not apply as yet. Certainly no critical structure should be built in these areas if reasonable alternative locations can be selected. If no reasonable alternative can be found and location must be within these areas, detailed geotechnical study of the proposed sites should be carried out, and the structural designs should go well beyond the minimum ones required for seismic safety of most ordinary construction. In the event that future development or redevelopment is planned, open space and low-occupancy structures should be favored for these areas to the greatest extent possible.

Seismic Shaking

Ground shaking generated by earthquakes causes, by far, more damage over a wider area than does surface rupturing by faults. It is estimated that 99% of the dollar loss from the 1971 San Fernando earthquake was due to shaking damage, and only 1% attributed to surface rupturing. Although earthquake prediction may be a reality in the not too distant future, the seismologist must rely on the means at hand to estimate where and how large the next quake will be, how often it will occur and determine what effect it will have at a particular site. Even with the installation of greater numbers of earthquake recording instruments providing more sophisticated data with which to analyze each shock, determining the numerous seismic parameters for that site is by no means an exact science. A review of the earthquake history of the region, even though the early records are sketchy and incomplete, is necessary for the seismic evaluation of the site.

Important factors which determine the shaking intensity at a given location are:

1. Distance from the earthquake.
2. Size or magnitude of the earthquake.
3. Local soil, geologic and groundwater conditions.

Other parameters which are measured or calculated include ground acceleration, predominant period, duration of strong motion, velocity, and displacement.

Earthquake Intensity. This is a qualitative measure of an earthquake's size determined by the relative damage caused, or observed effects noted, measured commonly on the Modified Mercalli Scale (Table 2). Data from past earthquakes have shown that the intensity of ground shaking can be several times greater on sites underlain by thick, soft alluvial deposits or by other poorly consolidated material than on bedrock. This results from the amplifying effects on the seismic wave as it passes from the bedrock up through the slower velocity alluvium and soil to the surface. The extent of shaking damage is also dependent partly on the structural integrity of building (i.e., the type and condition of the building).

Magnitude. Earthquake magnitude is a measure of the energy released. The Richter scale, the one most widely used today, is based on the seismogram amplitude recorded by a standard instrument at a standard distance from the epicenter. The scale is logarithmic, each increase of one in magnitude representing a 10-fold increase in amplitude. The energy released is proportional to the 1.5-power of the magnitude, so that a 10-fold amplitude increase also corresponds to a 32-fold increase in released energy. For example, a magnitude 6 earthquake has a seismogram amplitude 100 times greater than that of a magnitude 4 earthquake and releases 1000 times more energy. Earthquake potential of a given fault depends on the total length of the fault, the portion likely to rupture at one time, and the amount of stress buildup which has occurred since the previous earthquake. Very long faults, therefore, such as the San Andreas Fault, are capable of producing much larger earthquakes than shorter ones, like the Newport Inglewood.

Table 2 Modified Mercalli scale of earthquake intensities.

THE MERCALLI INTENSITY SCALE
(As modified by Charles F. Richter in 1956 and rearranged)

If most of these effects are observed	then the intensity is:	If most of these effects are observed	then the intensity is:
Earthquake shaking not felt. But people may observe marginal effects of large distance earthquakes without identifying these effects as earthquake-caused. Among them trees, structures, liquids, bodies of water sway slowly, or doors swing slowly	I	<i>Effect on people:</i> Difficult to stand. Shaking noticed by auto drivers. <i>Other effects:</i> Waves on ponds, water turbid with mud. Small slides and caving in along sand or gravel banks. Large bells ring. Furniture broken. Hanging objects quiver.	VIII
<i>Effect on people:</i> Shaking felt by those at rest, especially if they are indoors, and by those on upper floors.	II	<i>Structural effects:</i> Masonry D* heavily damaged; Masonry C* damaged, partially collapses in some cases; some damage to Masonry B*; none to Masonry A*. Stucco and some masonry walls fall. Chimneys, factory stacks, monuments, towers, elevated tanks twist or fall. Frame houses moved on foundations if not bolted down; loose panel walls thrown out. Decayed piling broken off.	
<i>Effect on people:</i> Felt by most people indoors. Some can estimate duration of shaking. But many may not recognize shaking of building as caused by an earthquake; the shaking is like that caused by the passing of light trucks.	III	<i>Effect on people:</i> General fright. People thrown to ground. <i>Other effects:</i> Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes. Steering of autos affected. Branches broken from trees.	IX
<i>Other effects:</i> Hanging objects swing. <i>Structural effects:</i> Windows or doors rattle. Wooden walls and frames creak.	IV	<i>Structural effects:</i> Masonry D* destroyed. Masonry C* heavily damaged, sometimes with complete collapse. Masonry B* is seriously damaged. General damage to foundations. Frame structures, if not bolted, shifted off foundations. Frames racked. Reservoirs seriously damaged. Underground pipes broken.	
<i>Effect on people:</i> Felt by everyone indoors. Many estimate duration of shaking. But they still may not recognize it as caused by an earthquake. The shaking is like that caused by the passing of heavy trucks, though sometimes, instead, people may feel the sensation of a jolt, as if a heavy ball had struck the walls.	V	<i>Effect on people:</i> General panic. <i>Other effects:</i> Conspicuous cracks in ground. In areas of soft ground, sand is ejected through holes and piles up into a small crater, and, in muddy areas, water fountains are formed.	X
<i>Other effects:</i> Hanging objects swing. Standing autos rock. Crockery clashes, dishes rattle or glasses clink. <i>Structural effects:</i> Doors close, open or swing. Windows rattle.	VI	<i>Structural effects:</i> Most masonry and frame structures destroyed along with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes and embankments. Railroads bent slightly.	
<i>Effect on people:</i> Felt by everyone indoors and by most people outdoors. Many now estimate not only the duration of shaking but also its direction and have no doubt as to its cause. Sleepers wakened. <i>Other effects:</i> Hanging objects swing. Shutters or pictures move. Pendulum clocks stop, start or change rate. Standing autos rock. Crockery clashes, dishes rattle or glasses clink. Liquids disturbed, some spilled. Small unstable objects displaced or upset. <i>Structural effects:</i> Weak plaster and Masonry D* crack. Windows break. Doors close, open or swing.	VII	<i>Effect on people:</i> General panic. <i>Other effects:</i> Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. <i>Structural effects:</i> General destruction of buildings. Underground pipelines completely out of service. Railroads bent greatly.	XI
<i>Effect on people:</i> Felt by everyone. Many are frightened and run outdoors. People walk unsteadily. <i>Other effects:</i> Small church or school bells ring. Pictures thrown off walls, knicknacks and books off shelves. Dishes or glasses broken. Furniture moved or overturned. Trees, bushes shaken visibly, or heard to rustle. <i>Structural effects:</i> Masonry D* damaged, some cracks in Masonry C*. Weak chimneys break at roof line. Plaster, loose bricks, stones, tiles, cornices, unbraced parapets and architectural ornaments fall. Concrete irrigation ditches damaged.	VIII	<i>Effect on people:</i> General panic. <i>Other effects:</i> Same as for Intensity X. <i>Structural effects:</i> Damage nearly total, the ultimate catastrophe. <i>Other effects:</i> Large rock masses displaced. Lines of sight and level distorted. Objects thrown into air.	XII
		* Masonry A: Good workmanship and mortar, reinforced designed to resist lateral forces Masonry B: Good workmanship and mortar, reinforced Masonry C: Good workmanship and mortar, unreinforced Masonry D: Poor workmanship and mortar, and weak materials like adobe	

Statistically, since numerous smaller earthquakes are more likely to occur on a given fault than a single large quake, it is important to determine the recurrence interval for a given magnitude earthquake for a particular fault so that a judgment can be made regarding the size of earthquake to be used for design of structures. Important structures or facilities (such as a hospital) require greater safety than do less important ones (such as a warehouse) and, therefore, are designed for the less likely, larger earthquake.

Credible and Probable Earthquakes. As used in this study, the maximum credible earthquake is the largest event likely to occur on an active fault, and having a recurrence interval of greater than 200 years. Although the probability of such an earthquake is considered to be very low, it is within the realm of possibility. This would be the controlling seismic event for the design of very critical or important structures such as a nuclear reactor or hospital.

For potentially active faults, the recurrence interval probably exceeds 300 to 500 years, with maximum credible magnitude estimated from empirical data based on 112 fault length rupture. These are not usually considered for design purposes, unless ultra-conservative designs are required.

The maximum probable earthquake is the largest quake most likely to occur on an active fault during the life of a structure, approximately 50 to 100 years. For a potentially active fault, the recurrence interval is probably 300 years or more. The maximum probable earthquake on an active fault is generally used for the design of most "ordinary" types of structures. Table 3 gives the parameters for the controlling seismic events for the City of Gardena.

Earthquake Design Parameters For Study Area. Table 4 lists the important seismic shaking components which should be considered in the design of new structures or evaluation of the performance of existing structures within the city. Of the potential earthquake generators, the Newport-Inglewood

TABLE 3
SUMMARY OF ACTIVE AND POTENTIALLY ACTIVE FAULTS
AND THEIR EARTHQUAKE PARAMETERS

CLASSIFI- CATION	FAULT	DISTANCE TO EPICENTER (miles)	MAXIMUM HISTORICAL EARTHQUAKE MAGNITUDE (RICKTER)	ESTIMATED MAXIMUM EARTHQUAKES			
				MAX. CREDIBLE ⁽¹⁾		MAX. PROBABLE ⁽²⁾	
				Magnitude (Richter)	Est. Recurr. Interval (Yrs)	Magnitude (Richter)	Est. Recurr. Interval (Yrs)
ACTIVE Controlling Seismic Events	Newport- Inglewood	0.3-3	6.3 (1933)	7.3	>300	6.7	50-150
	San Fernando- Sierra Madre	22-25	6.4 (1971)	6.7	>300	6.3	50-200
	San Andreas	45-48	8.0± 0.5 (1857)	8.25	>200	8.0	50-200 ⁽³⁾
	San Jacinto	43-46	7.1 (1940)	7.9	>300	7.5	>200(?)
POTENTIALLY ACTIVE Other Regional & Local Seismic Events	Malibu-Santa Monica-Raymond Hill	12-15	6.0 (1973)	7.1	>500(?)	6.6	>300(?)
	Whittier	18-20	3.2 (1971)	6.5		5.9	
	Norwalk	14-16	4.7 (1929)	6.0		5.4	
	Elsinore	36-38	5.5 (1938)	7.6		7.0	
	Palos Verdes	5.5-9	-----	6.0		5.4	

(1) Based on 1/2 fault length; magnitudes after Bonilla.

(3) Wallace, R.E.

(2) Based on 1/5 fault length.

TABLE 4

MAXIMUM PROBABLE EARTHQUAKES

FOR

CITY OF GARDENA

CAUSATIVE FAULT	DISTANCE FROM CAUSATIVE FAULT (Miles)	RICHTER MAGNITUDE	MAXIMUM GROUND (1) ACCELERATION (g)	PREDOMINANT (2) PERIODS (Seconds)	BRACKETED (3) DURATION (Seconds)
Leighton & Associates - 4 -	Newport-Inglewood Fault Zone	0.3-3	6.7	.6-.8 (VIII-IX) ⁽⁴⁾	.28-.30
	San Andreas Fault Zone	45-48	8.0	.15-.17 (VI-VII)	.5
	San Fernando-Sierra Madre Fault Zone	22-25	6.3	.12-.14 (VI-VII)	.28-.30
	San Jacinto Fault Zone	43-46	7.5	.11-.13 (VI-VII)	.42

(1) Base Rock Motion (Schnabel & Seed, 1972)

(2) Seed, Idriss, & Kiefer, 1969

(3) Leeds, 1973

(4) Approximate equivalent Modified Mercalli Intensity range within study area.

fault zone appears to be the most important for design analysis, in terms of ground acceleration values. For sites on thick soil, deep alluvium, or poorly compacted fill, however, the seismic motion components are modified somewhat (depending on the soil consistency, depth, and groundwater conditions) and the ground acceleration, although slightly less than for a bedrock site, is less important than the increased earthquake intensity which results from the amplification effects of the soil, alluvium, or fill. Therefore, it is necessary to evaluate all of the parameters of the controlling seismic events, taking into consideration the fundamental period of the structure being studied.

The maximum acceleration values given in Table 4 are applicable to design or analysis of one and two-story residential structures and of most commercial and industrial construction in the city. For medium- or high-rise structures, including all critical use or high-cost facilities, a seismic response spectrum should be developed for the specific site under consideration. The general seismic parameters developed in this report can be used as a basis for the refinement of more specific design parameters, taking into account the detailed data pertinent to that site.

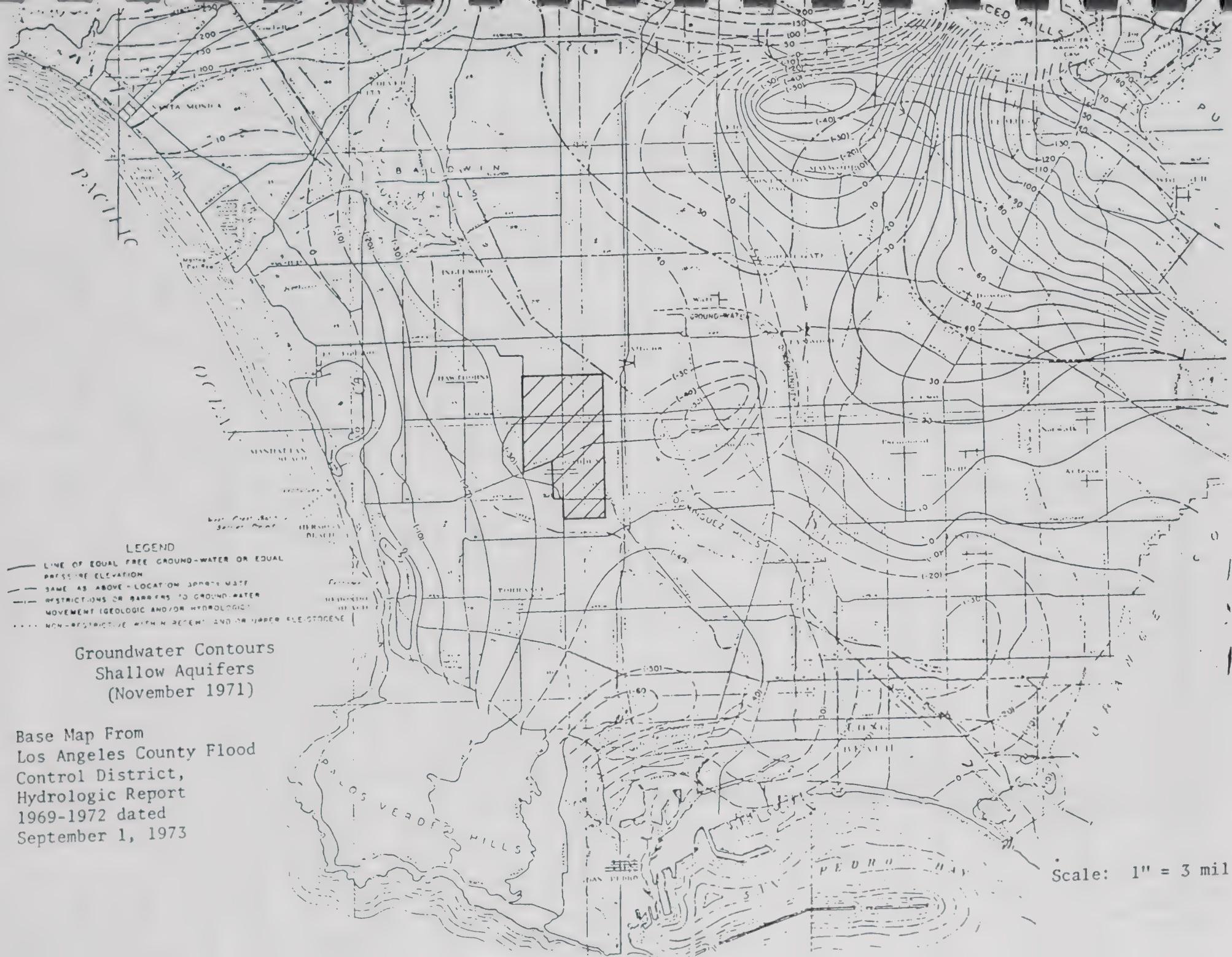
Secondary Effects

Liquefaction and Related Ground Failure Phenomena. Liquefaction, one of the more important secondary seismic hazards, can be described as a "quicksand" condition in which there is a total loss of foundation support caused by a shock (usually an earthquake of significant magnitude). This condition results from a sudden decrease of shearing resistance in a cohesionless soil (such as sand) accompanied by a temporary increase in pore-water pressure. Important factors in determining liquefaction potential are the intensity and duration of shaking, and the presence of relatively low-density fine sand and silt in an area of shallow groundwater.

Another type of liquefaction, which occurs at some depth from the surface, can, instead of causing widespread loss of foundation support, result in ground lurching, fissuring, or cracking. These effects are ascribed to flow landsliding or lateral spreading landslides which can occur at very low angles.

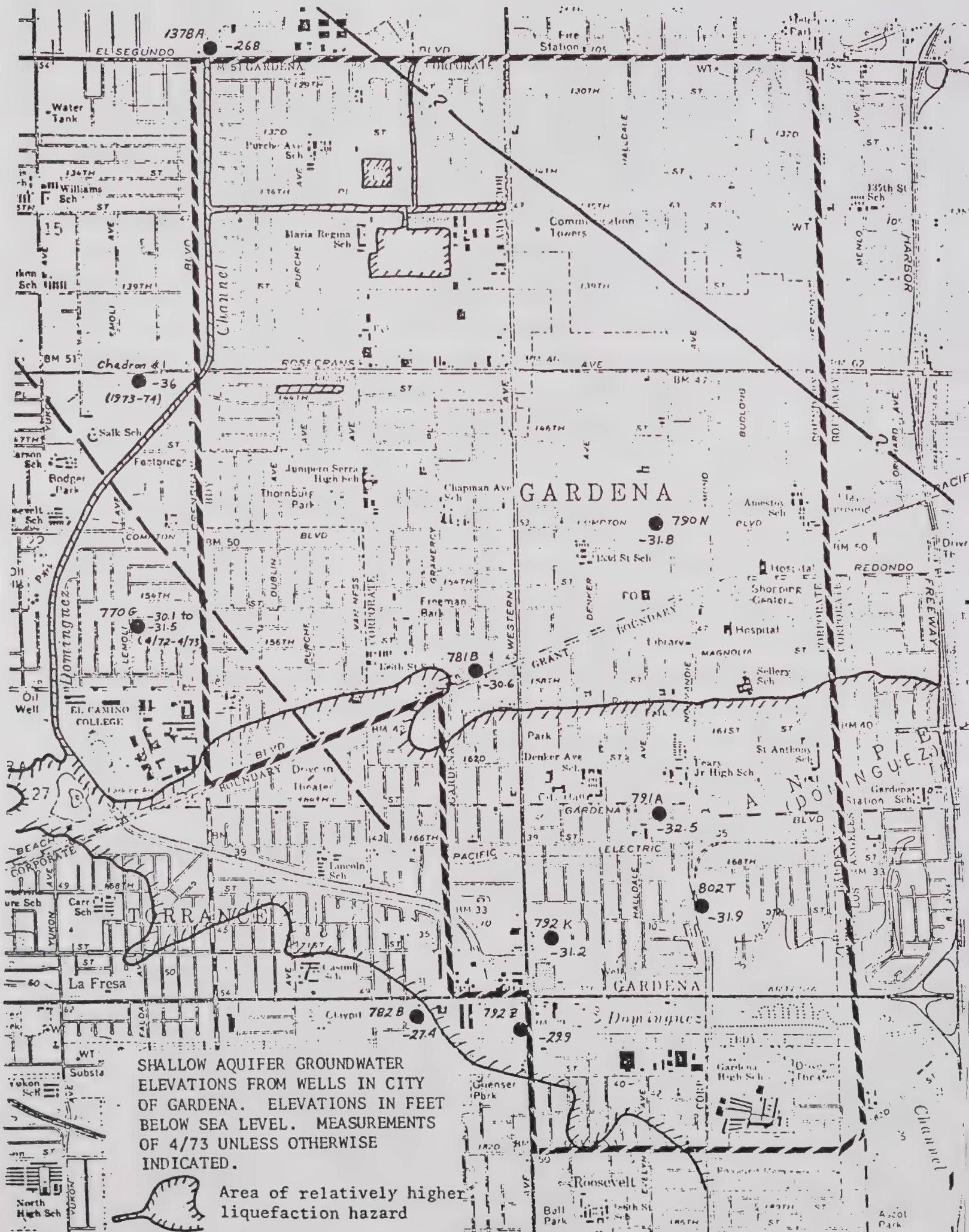
The method of Seed and Idriss (1971) was used to analyze the potential liquefaction hazard for the City of Gardena. Youd (1973) has pointed out that this method, though giving the potential liquefaction of materials, might not predict correctly actual ground failure due to liquefaction where materials of high relative density are involved; also that the method does not take account of ground slope. Available data from boring samples in Gardena, however, indicate that the relative densities are within the range of application of the method. As to the effect of slope, ground failure from liquefaction is more likely to occur where slopes are steep than where they are shallow, other things being equal. Since the topography of Gardena is relatively flat, the influence of slope on the liquefaction potential should be minimal. Use of the Seed and Idriss method, then, gives a conservative estimate of the potential hazard of ground failure from liquefaction that can be useful for seismic safety planning.

From the use of the Seed and Idriss curves and from estimates of grain size, porosity, and relative density of the sands encountered in borings of the Gardena subsurface it was estimated that the presence of groundwater within 35 feet of the surface could provide a potential liquefaction hazard. The groundwater level in the shallow main aquifers of the Gardena area was between 30 and 40 feet below sea level in November, 1971 (Figure 8) and this level was expected to remain constant for some time in the future because of pumping control, coastal recharging to prevent saline water intrusion, and the availability of supplementary Feather River and Colorado River water supplies. In order to obtain more recent data to corroborate this and in order to obtain data points in and near Gardena where no contour lines are shown on the map, a study was made of the well files of the Los Angeles County Flood Control District. The results are shown in Figure 9. Groundwater elevations in the wells range from -27.4 to -36 feet, and, since the lowest point in the city, exclusive of the Dominguez Channel bottom, is at



Base Map From
Los Angeles County Flood
Control District,
Hydrologic Report
1969-1972 dated
September 1, 1973

Scale: 1" = 3 mil



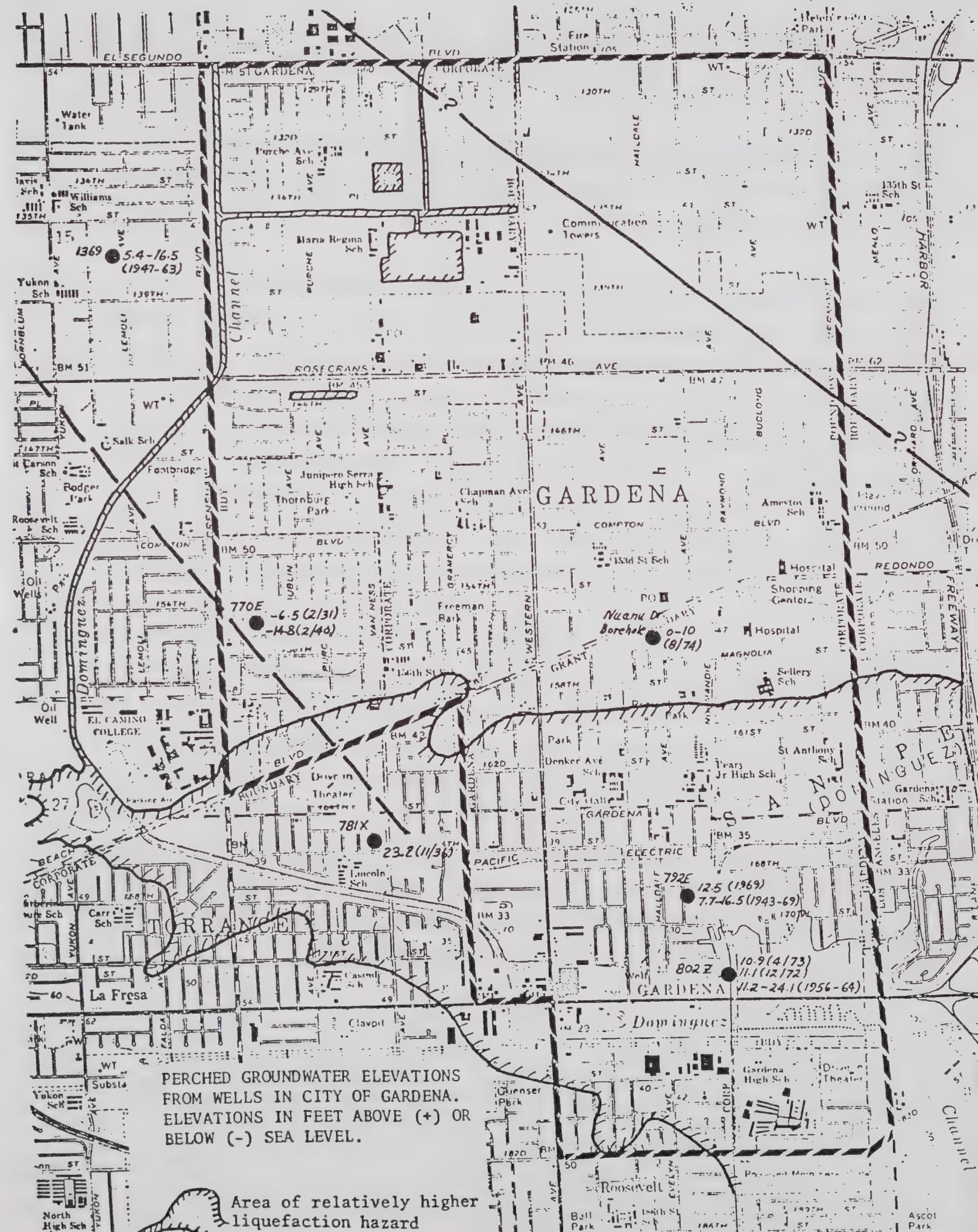
SHALLOW AQUIFER GROUNDWATER
ELEVATIONS FROM WELLS IN CITY
OF GARDENA. ELEVATIONS IN FEET
BELOW SEA LEVEL. MEASUREMENTS
OF 4/73 UNLESS OTHERWISE
INDICATED.

Area of relatively higher
liquefaction hazard

+5 feet (in the South Gardena Park flood control basin), it can be concluded that the groundwater levels in the shallow aquifers are more than 35 feet below the surface everywhere in the city and, therefore, no liquefaction hazard exists from this source.

Study of the District well files did disclose, however, the existence of a perched water table. According to District personnel, such perched water tables are common where clay layers are present. Unpublished studies by the District show that clay layers are widespread, though discontinuous, throughout the Los Angeles coastal basin. For this reason, the continuity of the perched water table in the Gardena area is uncertain, but the presence of the table is established. Figure 10 gives the pertinent data. Although much fluctuation in level appears to have taken place, the most recent measurements indicate an elevation of about 10 or 11 feet above sea level. On the assumption of 10-foot elevation throughout the city, a potential hazard from liquefaction would exist at all points with surface elevations of 45 feet and below. Accordingly, the 45-foot contour was drawn on Plate I as the approximate boundary of the hazard area.

It should be pointed out that the hazard is not equal throughout the area. The surface has a general slope toward the Dominguez Channel and easterly, so that depths to the perched water table decrease away from the hazard boundary. The liquefaction hazard, thus, is least at the boundary and increases in the same manner toward the channel and easterly. It should be noted further that whether ground failure occurs or not depends not only upon liquefaction in saturated deposits and depth below the surface but also upon the nature of the deposits and soil overlying the liquefied zone and the force of the earthquake. Therefore, other things being equal, in any given earthquake poorly consolidated alluvial deposits and soils and uncompacted fills might fail where firmer, more consolidated materials might not. Finally, the apparent fluctuation of levels with time would indicate that during dry seasons the lowered level would reduce the area of the hazard zone; conversely, during wet seasons that area might increase.



PERCHED GROUNDWATER ELEVATIONS
FROM WELLS IN CITY OF GARDENA.
ELEVATIONS IN FEET ABOVE (+) OR
BELOW (-) SEA LEVEL.



Area of relatively higher
liquefaction hazard

For critical-use structures, such as hospitals, the Veterans Administration has established certain criteria for determining whether liquefaction investigations are to be required. Sites requiring the study are based on the following criteria:

1. Sites with anticipated earthquake intensities of MM VII or greater.
2. Subsoils with saturated fine sand layers with 50% or more of grain size less than 2 millimeters, at a depth of 45 feet or less.
3. Subsoils having relative densities of 40% or less, considering a MM VII or greater earthquake intensity, or a relative density of 75% or less, considering a MM IX or greater earthquake intensity.

Similar guidelines should be considered for adoption by the City for investigation of sites for critical use structures.

Seismically-Induced Settlement and Landsliding. In the absence of a shallow water table, but with soil conditions otherwise ideal for liquefaction, settlement can occur in some degree, depending upon the intensity of shaking and the looseness of the soil. This compacting process could damage structures if there is significant differential settlement over short distances, which might occur in areas of uncompacted fill or, possibly, in areas of alluvium if the alluvium is not sufficiently firm or consolidated.

Marginally stable slopes may be subject to landsliding caused by seismic shaking. Most of Gardena is sufficiently flat, topographically, for any such hazard to be likely. The maximum slope (excluding the flood control basins), about 130 feet per mile in the extreme northeast corner of the city, is still gentle enough so that no landsliding is likely to occur. Flood control basins in the southeast and northwest parts of the city are also probably free of this hazard and any minor landsliding that might occur on the slopes of these basins would neither damage structures nor imperil lives.

Seiches and Tsunamis. A seiche is an earthquake-induce wave in a confined body of water. It could affect areas adjacent to a lake or reservoir by damage to boats and shoreline facilities; it could also affect more distant areas by overtopping or breaching a dam. No hazard from seiches presently exists to the City of Gardena because no reservoirs or dams are located in or near the city. The hazard will have to be evaluated, however, if in the future any dam, reservoir, or body of water of significant size is located close by.

A tsunami, also called a seismic sea wave or tidal wave, is a sea wave believed to be generated by a large submarine earthquake, volcanic eruption, or large submarine landslide. It can attain great heights when approaching the coast and can cause extensive damage to boats, harbors, and structures on or near the shore as well as considerable erosion of the land adjoining the shore. The Pacific coastal area is subject to tsunami hazard but, except in the case of flat, open coastal areas, the effects are felt only in the near vicinity of the coastline. The City of Gardena is more than 4 miles from the coast at its nearest point and, therefore, is not in danger of significant tsunami damage.

Inundation (Dams, Reservoirs, Tanks, Flood Control Channels). As mentioned above, no dams or reservoirs are located in or near the City of Gardena so that no flood hazard exists from these sources. Damage to the Dominguez channel and/or to the storm drains in the northwestern part of the city is most likely to be in the form of rupture of the concrete linings rather than complete blockage and with the normal low runoff is not likely to result in overflow. Even if large volumes of water were to be involved, probably only minor overflow might occur at the breaks and the greater part of the water would be confined to the still-existing channelways. In the case of flood conditions not connected with earthquakes, the Federal Insurance Administration has designated only the South Gardena Park area and three other small areas nearby as prone to flood hazard. These are shown on Plate 1.

The Southern California Water Company maintains two water tanks in the City of Gardena. The Southern District tank, in the northern part of the city, is an older tank, of concrete construction, built at ground level, with a height of 25 feet and a capacity of 190,000 gallons. The Dalton tank, in the southern part of the city, is rather new and also of concrete construction. It is 180 feet long, 70 feet wide and 22 feet high, with its base 12 feet below ground. It has a capacity of 2,000,000 gallons. During an earthquake, these tanks would be subject to the "sloshing" stresses of the contained water in addition to the shaking and ground failure dangers to which other structures are subject. We do not have information of the extent to which these tanks are earthquake-resistant. However, the most likely failure would involve partial rupture in a way that would produce slow leakage and release of the water. This is not estimated to produce any significant property damage or endanger lives in the vicinity of the affected tanks.

In the worst case, it can be assumed that the tank ruptures completely, releasing its full capacity all at once. In this event, water from the Southern District tank would flow westerly toward the Dominguez channel and, because of the generally flat terrain, would probably flow at low to moderate velocity. Probably only a minor amount of erosion of exposed loose soil would occur. Water from the Dalton tank, though in greater volume, would flow only a relatively short distance southerly and easterly into the Dominguez channel and South Gardena Park flood control basin. Because of the short distance and gentle slope it is estimated that in this case, too, only minor erosion at worst, would take place.

The chief danger would be in the initial surge at the time of tank rupture. If radial spread of the water in all directions is assumed and if the spreading sheet of water is assumed to lose destructive potential when it is reduced to a thickness of one foot, calculations show that an area of radius about 100 feet around the Southern District tank and about 200 feet around the Dalton tank could suffer damage. These areas should be maintained clear of any non-expendable facilities.

A third Southern California Water Company tank, the Chadron tank, is located just west of the city near Rosecrans Avenue. It is a fairly new steel tank of 1,500,000 gallons capacity. However, it is very near and just west of the Dominguez channel. Since the channel lies between it and the city to catch any flow, and since the flow would be southwesterly and away from the city, rupture of this tank would pose no danger to the City of Gardena,

GEOTECHNICAL HAZARD ANALYSIS: NON-SEISMIC

Slope Instability

Landslides and mudslides are the common modes of slope failure. These can be triggered by surface or subsurface water and generally occur where clay layers and other weak or adversely inclined strata are present. Except for the flood control basins, most of Gardena is topographically flat, so that failures of this type are not expected. The gently sloping area in the northeast part of the city, on the west flank of the Rosecrans hills, is developed, for the most part, and drainage provided in connection with the street system tends to prevent slope failures from occurring. Moderate slopes in the flood control basins in the northwest and southeast parts of the city may be slightly more susceptible to sliding, but probably only during periods of heavy rainfall. Even if such slides should occur here, however, there would be no danger to life or property and would cause only minor problems.

Soils and Soil Problems

Distribution, and Mapping. Nelson et al. (1919) provided a map of the soil types of the Los Angeles area, including what is now the City of Gardena, at a time when the area was primarily devoted to agriculture. The soils over almost all of the area encompassed by the present city limits and areas of influence consisted of loams and sandy loams. Clay adobe was mapped in the northwest square mile of the city, in the approximate area bounded by Crenshaw Boulevard, El Segundo Boulevard, Western Avenue, and Rosecrans Avenue. A small patch of clay loam was shown a short distance east of Western Avenue, extending northward from 182nd Street about one-quarter of a mile. However, development of the city and grading activities involved in construction have most likely altered the nature and distribution of these soils. Predictions of soil behavior for future development should be based upon soil tests performed for specific sites and upon data and experience from past construction.

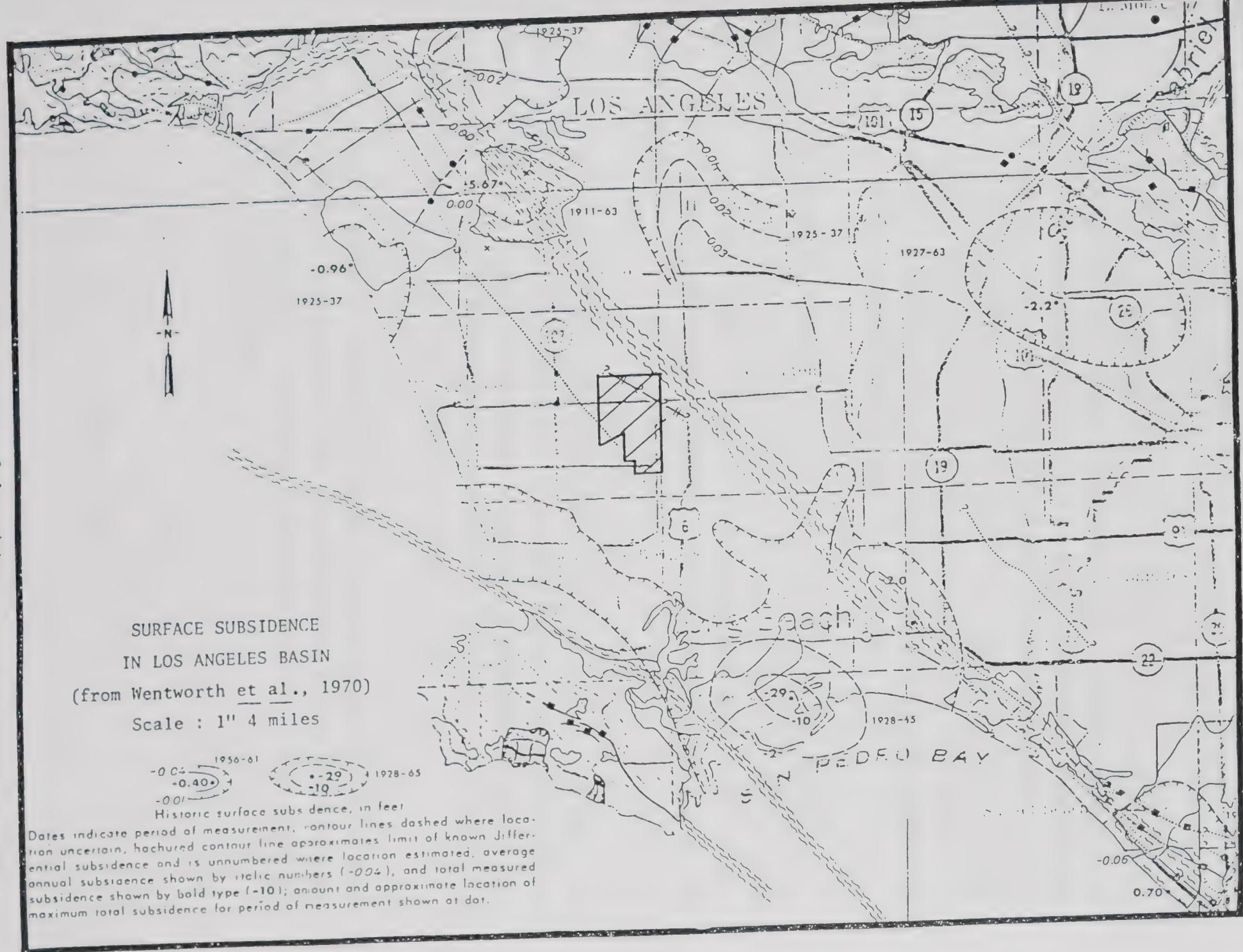
Expansive Soil. Information from Engineering and from Building and Safety Division personnel of the City of Gardena indicates that all Gardena soils are expansive, but that those in the northern and southern parts are somewhat more so than those in the central part. This roughly corresponds with the mapped distribution of clay-rich soils, certain types of which are highly expansive. Present engineering and construction methods used in and by the city are adequate for controlling the problem of expansive soils, however. Awareness of the problem, adherence to proper engineering and construction practices, and adequate testing procedures on individual sites will minimize any hazards from this source.

Settlement. The sinking or settlement of a structure, fill prism, or other imposed load is usually the result of compaction or consolidation of the underlying soil, due to its low density or compressible nature. Commonly, such soils can be found in alluvial areas and in areas of uncompacted fill.

In the absence of any significant settlement problems within the city, there appears to be no need for special concern regarding its effect on land use capability, so long as the settlement potential is recognized and is appropriately minimized or corrected during construction.

Subsidence. The man-caused phenomenon of broad-scale land sinking, or subsidence, is generally related to the overpumping and depletion of water or oil from deep underground reservoirs. It is not related to the surface soil type and cannot be readily predicted without detailed subsurface data. As yet, no recognized subsidence has occurred within the city.

Wentworth, et al. (1970) have summarized the data on historic surface subsidence in the Los Angeles basin. Their results are shown in Figure 11.



Greatest subsidence appears to have occurred in the Long Beach harbor area, the location of large and important oil production. A second important area is the Baldwin Hills, where subsidence, attributed to withdrawal of fluids in the course of oil production, caused a destructive reservoir break. The data do not indicate any danger to the City of Gardena, nor does there appear to be danger from shallower ground water extraction because of controlled pumping and because of the salt water intrusion control projects. The Rosecrans, South Rosecrans, Howard Townsite, and Alondra oil fields are located near the city boundaries, but these are relatively small fields with low production. They probably pose no danger from subsidence, but should be monitored for the sake of safety.

Hydrocompaction. Another form of subsidence caused by the addition rather than the extraction of fluid is the hazard of hydrocompaction. Because it can affect the near-surface soils very dramatically and can cause considerable structural damage to localized areas, hydrocompaction can be a serious hazard. Although it most commonly occurs in desert environments, it has been noted in some semi-arid regions of southern California.

Hydrocompaction commonly occurs in relatively loose, open-textured soils above the water table. Once water is introduced, either by heavy irrigation or a rise in the water table, the soil loses its strength and consolidates under its own weight. The soil condition can also result in the phenomenon normally called settlement, where the weight of significant amounts of fill placed on top of the soil causes compaction of the subsurface soils, even though there is no change in groundwater conditions.

Although the hydrocompaction potential cannot be adequately evaluated without detailed subsurface soil data, it is not known to have occurred in the city, with the possible exception of one pit with uncompacted fill in the southern part of the city. The likelihood of its occurrence is not considered great except, possibly, in open areas of uncompacted fill.

Groundwater Conditions

Aquifers. Almost all of the usable groundwater in Gardena and the part of the coastal plain in which it is located occurs in the Pleistocene San Pedro and Lakewood formations. At the turn of the century, artesian water was present in the area (Mendenhall, 1905), which contributed greatly to the rich agricultural development. Heavy usage, however, drew down the water levels and also eventually brought about intrusion of sea water into wells of the coastal area. Control of these problems was brought about by (1) court adjudication which set up controls on pumping, (2) the initiation of barrier projects near the coast in which fresh water is pumped into a line of wells to repel saline intrusion and maintain the level of the fresh water table, and (3) importation of Colorado River and Feather River water into the area to supplement the existing groundwater supplies. Today groundwater levels in Gardena remain relatively constant at 30 to 40 feet and 70 to 80 feet below sea level, respectively, in the upper and lower aquifers of the Lakewood formation. Elevations of the upper aquifer groundwater level throughout the Los Angeles coastal plain are shown in Figure 8; cross-sections showing the main Pleistocene aquifers underlying the City of Gardena are shown in Figures 3 and 4.

Seepage Problems. Surfacing groundwater appears to have been involved in two cases in the City of Gardena. Pavement failure on Nuanu Drive was attributed to excess moisture by the investigating engineers. Also, what was described as "underground spring and quicksand condition" appeared in the basement of a building on Vermont Avenue near 163rd Street. These may be caused by local shallow perched water zones and point to the necessity for appropriate evaluation of this problem on any future sites to be developed.

MINERAL RESOURCES

No mineral deposits are currently being exploited in Gardena. Formerly, clay deposits were commercially mined from open pits. One pit, at 176th Street and Western Avenue, operated from 1927 to 1956, and a second, on Artesia Boulevard near Western Avenue, operated over about the same period of time. Although good quality deposits still exist, mining is no longer economically feasible. In addition, the spread of development in the city has drastically reduced the area available for exploration and mining operations.

Gardena is located in the midst of an oil-producing area with oil fields on the east, west, and north of the city, but no oil has been discovered within the city itself. Since the city is located in a structural syncline, future oil prospects are not promising.

APPENDIX A

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APPENDIX B

AERIAL PHOTOS

<u>Year</u>	<u>Flight No.</u>	<u>Photo No.</u>	<u>Scale</u>	<u>Agency</u>
1928	C300	M65 to 70 M84 to 88 M102 to 103	1"=1500	Fairchild
1941	7347	33 to 38, 43 to 45 47 to 51, 58 to 64	1"=1000'	Fairchild
19si	16580	1-30	1"=2000'	Fairchild

APPENDIX C

GLOSSARY OF TERMS

ACCELERATION

Rate of change in velocity; felt as a force by objects. Measured in units of gravity (g).

ALLUVIUM

A general term for unconsolidated sediment (such as sand and gravel) deposited during relatively recent geologic time by a stream or other body of running water.

ASEISMIC

Earthquake resistant or non-seismic.

BEDDING

The arrangement of sedimentary rocks in layers or strata (separated by surfaces called bedding planes).

BEDROCK

Firm or coherent -rock material that underlies the soil and surficial deposits such as alluvium. It is divided geologically into three principal types: Igneous (e.g., granite), sedimentary (sandstone) and metamorphic (gneiss).

BRACKETED DURATION

The time during which a particular level of earth shaking lasts. This level is defined by a horizontal ground acceleration greater than or equal to 0.05g, having a frequency greater than or equal to 2 cycles per second. Bracketed duration is useful for building design.

COLLUVIAL

A thick deposit of soil-like material on or at the base of slopes as a result of gravitational forces, deep weathering, and sheet erosion.

CONGLOMERATE

A sedimentary rock composed of rounded, pebble or cobble to boulder-size fragments, usually in a finer matrix of sand.

CRITICAL-USE STRUCTURE

Synonymous with vital or essential facilities, as used in this study. Refers to important structures which must remain functional and safe for occupancy after a severe earthquake. Types of structures included in this category varies but generally include such facilities as hospitals, fire stations, police and other emergency operational centers, and major power or communication complexes.

EPICENTER

The point on the earth's surface directly above the focus or hypocenter of an earthquake (originating point within the earth).

EXPANSIVE SOIL

A soil which undergoes a significant and reversible change in volume resulting from a change in moisture content.

FAULT

A fracture or plane of breakage in soil or rock, along which there has been relative movement of the two sides due to earth-deforming forces. Faults are classified according to the type of relative movement.

FAULT TRACE

The line of intersection of a fault with the earth's surface.

FAULT ZONE

Typical of major faults, where numerous subparallel and intersecting fault traces characterize a wide band of faulting.

FORMATION

A rock unit which can be recognized, named, and named , e.g., the Topanga Formation.

GEOTECHNICAL

Pertaining to geologic-soils engineering studies, features, conditions or events.

GROUND RUPTURE

See SURFACE RUPTURE.

GROUNDWATER

That part of the subsurface water which is in the zone of saturation.

HYPOCENTER

In an earthquake, the point of initial rock rupture or slippage within the earth. Same as focus.

INTENSITY

A qualitative or subjective measure of the destructiveness of an earthquake based on observed effects or sensations experienced by people; a number scale, e.g., Mercalli.

LIQUEFACTION

The sudden, large decrease of shearing resistance of a cohesionless soil caused by collapse of the soil structure, produced by seismic shaking or small shear strains, associated with sudden but temporary increase of water pressure in the soil voids.

LURCHING (or Ground Lurching)

Surface cracking or similar ground failure resulting from strong seismic shaking; related to liquefaction or subsurface flowage.

MAGNITUDE

A quantitative instrumental measure of the total energy release of a quake; a logarithmic number scale, e.g., Richter.

PERIOD

The time interval for a complete cyclic motion, as in a graph of an earthquake event; reciprocal of frequency. Fundamental Period: The longest period for which a structure or soil column shows a response peak - commonly the period of maximum response; same as site period.

Predominant Period: That period characteristic of the strongest earthquake motion. Predominant period increases with distance from the epicenter.

RECURRENCE INTERVAL

The average length of time between earthquake events of a specified magnitude.

RESPONSE SPECTRUM

A plot of the response of a number of single-degree-of-freedom systems to a real or synthetic ground motion time-history; a quantified description of the vibratory effect of the ground acceleration on buildings.

Ground Motion Spectrum: A tripartite logarithmic plot of maximum expected seismic motion at a site, representing ground displacement, velocity and acceleration. The curve from which the response spectra are derived.

SANDSTONE

A sedimentary rock of cemented sand-size particles.

SATURATED

A rock or soil is saturated with respect to water if all its interstices are filled with water.

SEDIMENTARY ROCK

The class of rocks made up of transported and deposited rock and mineral particles (sediment) and of chemical substances derived from weathering.

SEICHE

Earthquake-induced waves in lakes, ponds, bays, or other enclosed bodies of water; also caused by landsliding.

SEISMIC

Pertaining to or caused by an earthquake.

Seismicity: Earth movement phenomena as related to earthquakes; also a measure of the areals susceptibility to earthquakes.

SETTLEMENT

The downward movement of a soil or of the structure which it supports, resulting from a reduction in the voids in the underlying strata.

SHALE

A thinly layered or stratified sedimentary rock of clay-size particles.

SILTSTONE

A sedimentary rock of cemented particles intermediate in size between sand and clay (silt).

STRATIFICATION

A structure of sedimentary rocks produced by deposition in layers (beds).

SUBSIDENCE

The relatively slow, gradual sinking of a large area in a vertical direction with little or no horizontal movement. Commonly related to the withdrawal of subterranean fluids.

SURFACE RUPTURE

During an earthquake, the permanent displacement (or offset) of the earth's surface along a fault plane. Ground breakage at the earth's surface.

TECTONIC

Pertaining to rock structure resulting from deformation of the earth's crust.

TSUNAMI

Earthquake-induced ocean waves, commonly referred to as tidal waves.

WEATHERING

The changes whereby materials such as bedrock decay and crumble to form sediment.

APPENDIX D

HAZARD COMPARISON OF NON-EARTHQUAKE-RESISTIVE BUILDINGS

<u>Simplified Description of Structural Types</u>	<u>Relative Damageability in order to increasing susceptibility to damage</u>
Small wood-frame structures, i. e. dwellings not over 3, 000 sq. ft. , arid not over 3 stories	1
Single or multistory steel-frame buildings with concrete exterior walls, concrete floors, and concrete roof. Moderate wall openings	1.5
Single or multistory reinforced-concrete buildings with concrete exterior walls, concrete floors, and concrete roof. Moderate wall openings	2
Large area wood-frame buildings and other wood-frame buildings	3 to 4
Single or multistory steel-frame buildings with unreinforced masonry exterior wall panels; concrete floors and concrete roof	4
Single or multistory reinforced-concrete frame buildings with unreinforced masonry exterior wall panels, concrete floors and concrete roof	5
Reinforced concrete bearing walls with supported floors and roof of any materials (usually wood)	5
Buildings with unreinforced brick masonry having sandlime mortar; and with supported floors and roof of any materials (usually wood)	7 up
Bearing walls of unreinforced adobe, unreinforced hollow concrete block, or unreinforced hollow clay tile	Collapse hazards in moderate shocks

This table is not complete. Additional considerations would include parapets, building interiors, utilities and building orientation and frequency response.

(from Armstrong, 1973)

APPENDIX E

Sheet No. _____

Date _____

Compiler _____

BUILDING STRUCTURAL DATA SHEET

1. Building Address _____ Map Index _____
2. Occupancy, Use _____ Normal-Occupancy (Nos.) _____
3. Zoning _____ Fire Zone _____ Redevelopment Area _____
4. Year Built _____ Architect _____ Engineer _____ Contractor _____
5. Lot Size _____ Slope 0% _____ 0-5% _____ 5-10% _____ Over 10% _____
6. Bldg. Size _____ No. Stories _____ Basement? _____
7. Type Construction: 1A, 1B, 1I, 1II, 1V, V, Other _____
8. Maintenance: Excellent, Good, Average, Rundown, Condemned.
9. Framing:

<u>General</u>	<u>Walls</u>	<u>Roof & Floors</u>
a. Steel Frame	Reinf. Concrete	R/C Slab
b. Conc. Frame	Reinf. Masonry	Conc. Joist
c. Wood Post & Beam	Plywd. & Stud	Prestressed-
d. All Bearing Wall	Wood Diag. Sht.	Metal Deck
e. Frame & Cols. In Wall	Wood Weak Sht.	Wood-Plywd.
f. Other,	Unreinf. Masonry	Wood D.S.
g. _____	Other _____	Other _____

10. Extent of Walls: % Openings _____ Nos. of Sides _____
11. Foundations: Spread, Piles, Caissons, Other _____
12. Soil Type _____
13. Stairs: Open, Closed, Fire Rated
14. Parapets and Falling Hazards
15. Traffic Under Falling Hazards: Heavy, Medium, Light, Residential
16. Basic Earthquake Resist. System: Frame, Box, Combination, None
17. Utilities _____
18. Remarks by Compiler: _____ (from Armstrong, 1973)

APPENDIX F

CITIZEN RESPONSE

Surprisingly, most people in California have not directly experienced a damaging earthquake. Earthquakes are usually regarded as an indefinite future occurrence and tend to be forgotten in favor of more pressing daily priorities. Understandably when a damaging earthquake does occur, it creates a lot of fear in the minds of those closest to the epicenter of the quake. Fear is best alleviated by removing the mystery surrounding an earthquake.

SUGGESTIONS TO GARDENA RESIDENTS

A. Before an Earthquake

1. Since this is "earthquake country", understand as much as you can about earthquakes by reading such books as Earthquake Country by Robert Iacopi (paperback).
2. Support programs for strengthening building codes, replacing old buildings, and conducting earthquake research.
3. Discuss and practice emergency drills with your family; keep a flashlight and battery-powered transistor radio; learn elementary first-aid.
4. Check your home for earthquake hazards; for example, anchor top heavy objects, provide strong support for water heaters, know where and how to shut off your gas line.

B. During an Earthquake

1. DO NOT PANIC. Resist the initial impulse to run. Don't move without considering the consequences.
2. If in your house, get under a table or strong doorway. Watch for falling objects such as plaster, books, shelves. Stay away from windows chimneys, mirrors.

3. If in a crowded store, do not rush for a doorway: everybody else will have the same idea.
4. If outside, avoid high buildings, power poles, walls, etc. If you are in a car, stop in an open area.
5. Don't worry about being buried in a yawning fissure. (No human has been reported injured in this way in the United States.)

C. After the Quake

1. CHECK FOR INJURIES in your family and neighborhood. Don't move the seriously injured unless they are in immediate danger of further injury.
2. CHECK FOR FIRES OR FIRE HAZARDS. Shut off gas lines and electrical power. Watch for downed power lines. Do not use matches, appliances, etc., until you are positive there are no gas leaks.
3. Check to see if the water lines are operable. If the water is off, emergency supplies are available in the water heater, toilet tanks, melted ice-cubes and canned vegetables.
4. Check to see if sewage lines are intact before allowing repeated flushing of toilets.
5. Wear shoes in areas full of debris and shattered glass. Do not eat food that is near shattered glass. If electrical power is off, check the refrigerator/freezer and plan meals to use foods that will spoil quickly.
6. Check your house for structural damage: cracks in walls, roof, chimney. Check closets and shelves, open doors carefully, watch for falling objects.
7. Cooperate with the disaster authorities. Do not go sightseeing in disaster areas or in coastal areas. Keep your radio on so you can be informed. Don't use the telephone unnecessarily.
8. Anticipate aftershocks; they are a normal aftermath of damaging quakes. Parents should stay with young children who may suffer psychological trauma if separated from parents during aftershock.
9. Send information to the Seismological Field Survey to help earth scientists understand earthquakes better.

[Modified from: Clark, 1971 in California Geology, v. 24, no. 11]

APPENDIX G
ENVIRONMENTAL IMPACT REPORT
CITY OF GARDENA SEISMIC SAFETY ELEMENT

This report has been prepared in accordance with the latest CEQA (California Environmental Quality Act) and CIR (Council on Intergovernmental Relations) guidelines.

PROJECT DESCRIPTION

The project consists of the proposed Seismic Safety Element (draft dated November 18, 1974) for the City of Gardena General Plan. The study area includes the incorporated city boundaries and its sphere of influence, an area of 5.25 square miles. The primary goals sought by the project are the protection of life, property, and public well-being from hazardous seismic and other geologic conditions and the reduction or avoidance of adverse economic, social, and environmental impacts caused by geologic conditions. To accomplish these goals, policies are formulated and an integrated set of actions is recommended for implementation of the policies.

The technical portion of the report includes a detailed review of geotechnical conditions in the study area. The following geologic and seismically-induced hazards were evaluated for the study area: possible ground rupture along active and potentially active faults, seismic ground shaking caused by earthquakes, liquefaction or settlement potential for areas underlain by unconsolidated alluvium and unengineered fills, and inundation from heavy rainfall and from dam or reservoir failure. Major findings include the identification of two possibly active fault traces transacting the study area: the Charnock fault and an unnamed segment of the Newport-Inglewood fault zone. Areas of potential liquefaction are delineated on the basis of a shallow perched groundwater occurrence.

The results of the geotechnical analysis and review are presented in two products: a Map of Geology, Topography, Hazards, and Important Structures and Facilities, which portrays graphically the principal geotechnical problems and constraints in the Gardena area, and a Land-Use Capability Map, which translates the geotechnical data into land-use categories based on the relative degree of risk involved with a given combination of hazards.

ENVIRONMENTAL SETTING

The City of Gardena is located 13 miles southwest of Los Angeles Civic Center in the middle of the Los Angeles coastal plain. (Refer to Regional Map, Figure 1.) Approximately ninety-four percent of the land in the city is developed, reflecting its highly urbanized nature. New growth in the city is constrained by the paucity of vacant land. Future growth would result primarily from demolition of older structures to allow a more intense utilization of the land. Population of the study area is approximately 46,000 and is not expected to increase significantly. The city is primarily a residential community.

The study area occupies the floodplain of the Los Angeles River; thus the topography is very flat. Generally, the land slopes toward the west in the northern portion of the study area; in the southern portion, the land slopes toward the south and east. (Refer to Plate I.) The climate is classified as dry-summer Mediterranean. Rainfall averages approximately 15 inches per year. Temperatures are mild: the average January temperature is about 51°, and the average July temperature is about 68°. The climate in the Gardena area is further modified by the cool, onshore breezes from the Pacific Ocean, only four miles away.

The City of Gardena is located in the Peninsular Ranges province of California. The underlying bedrock consists of several thousand feet of Tertiary and Quaternary sedimentary rocks resting on a

crystalline, metamorphic basement of presumably Mesozoic age. The surficial materials in the Gardena area consist entirely of unconsolidated alluvial and terrace deposits. The entire area adjoins the Newport-Inglewood zone of deformation, a zone of faulting and folding that has been the source of considerable historic seismic activity. The Charnock fault crosses the southwestern edge of Gardena. It is probably associated with the Newport-Inglewood zone; however, its state of activity is uncertain.

ENVIRONMENTAL IMPACTS

The Seismic Safety Element includes a statement of goals and policies and a recommended implementation program. The following discussion presents the environmental impacts that might be expected from implementation of the policies recommended for adoption by the city.

1. POLICY: To maintain, revise (whenever necessary), and enforce adequate standards and criteria to reduce or avoid all levels of seismic or other geologic risk, whether it be unacceptable, tolerated or avoidable risk.

IMPACT: Reduction of seismic and geologic risk will have a long-term positive impact on the community. Adoption of adequate standards coupled with an implementation program to reduce risk will most likely require commitment of significant funds by the municipal government. However, economic losses due to earthquake damage will be greatly reduced by this action, and loss of life and psychological trauma can be minimized.

2. POLICY: To encourage the reduction of risks associated with hazardous old buildings through action programs including, but not limited to, rehabilitation, occupancy reduction, and selective demolition.

IMPACT: Reduction of risks associated with hazardous old buildings will have a definite, positive impact on the social environment of Gardena. Bodily injury and loss of life will be minimized with such action. Any anticipated community redevelopment program should take this policy into account. Such a program would, in fact, be an effective vehicle for implementing the policy. Again, enactment of this policy will require a commitment of funds on the part of the local government. However, prevention of losses should more than offset the costs incurred. Temporary negative impacts would be those associated with most construction activities. These would be mainly noise, dust, and impairment of pedestrian and vehicular traffic.

3. POLICY: To evaluate the compatibility of existing zoning as well as future land-use allocation with known geologic risk zones or those which may be identified in the future.

IMPACT: A wiser and safer use of the land is promoted with the adoption and implementation of this policy. However, it should be realized that none of the hazards described in the Seismic Safety Element entails a recognized unacceptable risk. At worst, such as in the case of the water flooding and of the uncompacted fill, risk can be rated as tolerated. In view of the fact that the city is almost completely developed and the fact much of the higher risk acreage of the city is already in open-space or low-occupancy usage, zoning changes to conform with this policy and their impacts are expected to be minimal.

Maintaining or expanding open space may have a negative economic impact by reducing tax revenue. On the other hand, by enhancing the environment of the city and making it a more pleasant place to live, such open space could increase property values so as to compensate for the negative impact or even produce a net increase in tax revenues. (This might not be considered a positive economic impact by the taxpayer, of course)

In certain cases in more hazardous areas, chiefly those areas involving important structures, the usage may be conforming but the important character of the structure may demand greater care in site preparation, additional site investigations, or other extraordinary operations not required in the ordinary case. These could result in negative economic impacts, but the additional safety investment should compensate for them.

On the whole, the impact of this policy should be positive because it would provide greater protection for life and property, maintain desirable open space, and make for a desirable diversity of land use and tax base among residential, commercial, industrial, and open-space zones.

4. POLICY: To recognize the need to provide greater safety for important or critical use structures through careful site selection, appropriately comprehensive site investigation, and enforcement of applicable codes and regulations.

IMPACT: (See Policy No. 5.)

5. POLICY: To prohibit development of important or critical-use structures in the areas of highest liquefaction potential and in any active fault zones unless no other more suitable site can be located and the site is shown to be safe for the intended use.

IMPACT: These two policies reaffirm the commitment that man has to live with, not against, the forces of nature, and that he must provide relatively greater protection to the general public by requiring seismically safe buildings (especially major structures) either by appropriate

construction regulation or avoidance of hazardous sites. The impacts of the adoption of these two policies will be generally positive, although in the course of modifying land prior to construction, i.e., grading, the natural topography may be rearranged. Also, greater initial development cost for such structures may result from implementation of new requirements.

6. **POLICY:** To advocate improved seismic safety programs for schools and promote greater general public awareness of all types of geotechnical hazards.

IMPACT: Endorsement of this policy will facilitate public acceptance of land-use plans which are sensitive to environmental concerns and geologic hazards. Also, awareness on the part of the public of proper precautions to take before an earthquake and of proper actions to take during an earthquake can greatly reduce the loss of life and property as well as the degree of panic, should an earthquake occur. Although there is no immediate direct impact on land-use planning or on environmental resources, the long-term benefits accruing from education of the citizenry can be immense.

7. **POLICY:** To improve interjurisdictional cooperation and communication, especially in regard to seismic safety aspects related to dams, reservoirs, state highway and freeway structures, regional fault studies, legislative matters, and disaster response or emergency plans.

IMPACT: Adoption of this policy has no direct environmental impact, but the benefits are great. One of the principal concepts of the science of ecology is the interrelationship of all organisms and their non-living surroundings. Mutual cooperation on the part of jurisdictions can only lead to great social and environmental benefits.

Not only are the chances for mutual understanding and agreement enhanced, but also the opportunity for eliminating duplicative efforts and for benefiting from economies derived from joint studies is increased. The likelihood that in a strong earthquake critical-use structures may suffer more destructive damage and injuries may affect more people in some communities than in others requires area-wide cooperation for the best, most prompt, and most efficient emergency response.

8. **POLICY:** To advocate improved earthquake insurance programs and seek qualification of the City for federal mudslide and flood insurance.

IMPACT: In case of damaging earthquakes, landslides, or floods, social and economic losses could be reduced greatly by making available insurance at costs lower than otherwise possible. This policy has no impact on the environment.

Unavoidable Adverse Effects

The proposed Seismic Safety Element places no absolute restrictions on development because of geologic hazards. It merely delineates those areas generally more, or less, suited to the various land uses. Thus, loss of life, property damage, and social dislocation are not necessarily precluded in the event of a severe earthquake which could affect a number of existing and future structures. However, this element is generally intended to help minimize environmentally harmful or geotechnically incompatible development in Gardena and its sphere of influence. Much will depend on how effectively and rapidly the recommended policies and actions are implemented.

Mitigating Measures

It is unnecessary to propose mitigation measures to a general plan element, which itself employs mitigate strategies and has an over-all beneficial impact. It should be noted, however, that some legislative

implementation measures designed to mitigate seismic hazards may not have the broad support of the community due to property restrictions which may result. Many legal precedents remain to be set. Hazard-mitigating legislation should be carefully drafted to withstand legal challenges.

Alternatives

The only alternatives to the proposal are "no action" and "eliminate the hazard entirely." Eliminating the hazard entirely is not feasible given the current state-of-the-art in earthquake control and prediction. The alternative of "no action" is also not feasible because it would do nothing to regulate development in geotechnically hazardous areas, thereby increasing the likelihood of loss of life or property. In addition, the Seismic Safety Element is mandated by state law.

Short-Term Use and Long-Term Productivity

The Seismic Safety Element provides the means for evaluating possible developments in areas with geotechnical (seismic and nonseismic) problems and how to provide means to minimize these problems. On this basis, the short-term uses of hazardous lands may be limited, but in the long run public safety will be increased.

Irreversible Environmental Changes None

Growth-Inducing Impact

The Seismic Safety Element may tend to reduce or inhibit growth because some contemplated developments may not be feasible due to the implementation of some of the policies in this Element. This growth may be redirected to other areas in the City, thus locally increasing the population densities. Likewise, if a building abatement program for seismically unsafe structures is found to be necessary and is implemented, greater population densities could result because areas subjected to any type of

redevelopment are commonly rebuilt to higher densities than existed before. In this case it might be possible to channel the earlier contemplated growth areas (found to be hazardous) to proposed redevelopment areas. The growth inducing impact, therefore, could also be neutral.

Water Quality Impact

None

Organizations and Persons Consulted

This Environmental Impact Report was prepared by the staff of Leighton and Associates.



CITY OF GARDENA

SAFETY ELEMENT

PREPARED BY THE JOINT EFFORTS OF:

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POLICE DEPARTMENT AND
COMMUNITY DEVELOPMENT DEPARTMENTS.

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ADOPTED

March 25, 1975

Reso. No. 3129

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SAFETY ELEMENT

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SAFETY ELEMENT
CITY OF GARDENA

. . . it should be kept in mind that any attempt to develop the appropriate planning response to potential hazard involves a judgment, either explicit or implicit, of how much risk is acceptable. There is no such thing as a perfectly hazard-free environment. Natural and manmade hazards of some kind and degree are always present. However, efforts can be productively undertaken to try to mitigate the consequences of known hazards."

General Plan Guidelines
Council on Intergovernmental Relations

I. INTRODUCTION & AUTHORIZATION

The City of Gardena, with a population of approximately 46,000, has experienced a continued growth pattern while Los Angeles County has experienced a decline. The increasing population trend has contributed greatly to the intensification of land use throughout Gardena. The increase in population and land use intensification has contributed to creating potential safety hazards.

The Safety Element of the City's Comprehensive Plan is intended to identify and define programs to protect the community from fire and geologic hazards. The Element focuses on features necessary for community safety such as water supply requirements, clearance around structures, and fire and geologic hazard mapping. As directed by Section 65302.1 of the California State Government Code, it recognizes and defines substantive problem areas of urban fire hazards, brush fire hazards, and geologic hazards. The California Council on Intergovernmental Relations defines other pertinent terminology relative to types of risks involved.

Awareness of related problems due to flooding are acknowledged as potential hazards, but will be discussed in the Conservation Element as well as the Safety Element.

Guidelines prepared by the California Council on Intergovernmental Relations state that "consideration may be given to the crime prevention aspects of land use development such as planning for 'defensible space'?" The concept of defensible space is a relatively new approach to the problem of crime prevention and is based on the use of physical planning and structural design as a deterrent to crime.

HAZARD DEFINITIONS:

Urban Fire Hazard	Predominantly characterized by structural fire hazards affecting residential, commercial, and industrial activities.
Brush Fire Hazard	The seasonal fire hazards in sparsely developed, brush-covered natural and man-made environments; and the potential impacts of resulting flood and erosion problems.
Geologic Hazard	Geologic activity, other than seismic events, creating an impact on the safety and welfare of the City of Gardena citizens, such as slope instability, general subsidence, differential settling, erosion, and other associated problems.

RISK DEFINITIONS:

Acceptable Risk	The level of risk below which no specific action by local government is deemed to be necessary.
Unacceptable Risk	Perceivable risks to life and property that must be reduced via ongoing government action program.
Avoidable Risk	Risk not necessary to take because individual or public goals can be achieved at the same or less total "cost" by other means without taking the risk.

DEFENSIBLE SPACE DEFINITION:

Defensible Space	Concept of urban space designed to inhibit crime by utilizing the proprietary concerns of residents. Key ingredients in designing defensible space include: improving the natural capability of residents to visually survey the public areas of their residential environment; enhancing spheres of territorial influence within which residents can easily adopt proprietary attitude; and enhancing safety through the strategic geographic location of intensively used community facilities.
------------------	---

II. RELATIONSHIP TO OTHER GENERAL PLAN ELEMENTS

Effectiveness of the total comprehensive general plan depends upon the understanding of the mutual inter-relationships among the elements. Particularly strong inter-relationships exist between the Safety Element and the Seismic Safety, Land Use., and Conservation Elements.

Land Use planning exercises a direct influence on safety and is an extremely effective tool for the regulation of land uses in potentially hazardous areas. It can also aid in the achievement of the objectives of the Safety Element. Through restrictions on the densities and replacement of or rejuvenation of older structures, the Land Use Element will supplement the programs and policies of the Safety Element.

The Safety Element and the Seismic Element have the strongest relationship. In some instances they are combined into a single document sharing the same goals and policies and require a similar approach to reduce the loss of life and property. The City of Gardena chose to separate the two elements, thus allowing direct and specific input into the Safety Element from the Fire and Police Departments. The Fire Department is in the early stages of developing a Master Plan and much

of the information will be more thoroughly researched as the Master Plan progresses. Once Fire Department's Master Plan is developed, the goals and objectives of the Safety, Element should be revised to compliment the new Master Plan.

The Conservation and Open Space Elements have important implications relating to the Safety Element. The goals and policies of the Open Space Element encourages the expansion of the park system as well as encouraging the establishment of small neighborhood parks, thus enhancing the community aesthetic value as well as providing the needed recreational area for the residents of the neighborhood.

The Conservation Element describes the lack of natural landscapes within the City. Therefore, it concentrates on the dynamic physical uses of urban lands and services required by the City. Its major concern is the protection and preservation of life and property and the prevention of economic loss. Therefore, goals and policies of the two elements (Conservation and Safety) are interrelated.

III. STATEMENT OF GOALS, OBJECTIVES AND POLICIES

Goals reflect broad aims and basic values. They establish emphasis and tone for policy and program formulation. The decisions and activities of city government pertaining to safety should be guided by the intent of the goals set forth.

The purpose of the Safety Element is to strive toward achievement of the following goals:

Protection of life and property.

Reduction of adverse economic environmental and social conditions resulting from fires and geologic hazards.

The objectives and policies which follow are offered as a means of realizing these goals.

SUB-GOAL 1

The City shall provide for the safety of life and property from fires, explosions and natural disasters.

OBJECTIVES

1. To insure that all fire station accesses have the least possible conflict with vehicular and pedestrian traffic.
2. To insure that fire station service areas continue to be determined on the basis of present and/or proposed land use patterns and freeway and major street systems.

3. To provide an adequate supply of water with ample pressure in the event of fire,
4. To insure continued participation in and support programs and practices for dealing with land subsidence, erosion, and salt water intrusion.
5. To provide an adequate level of emergency medical service.
6. To protect life and property from the hazard of flooding.

POLICIES

In view of the objectives found under Sub-Goal 1, the following policies should be instituted:

1. Construct all stations necessary to conform with existing standards.
2. Acquire land necessary for new fire stations as far in advance of construction date as possible.
3. Research proposed fire station sites to assure compatibility with surrounding land uses.
4. Replace obsolete stations and relocate poorly located facilities.
5. Establish and maintain a "hot fire" training program in conjunction with other cities.
6. Encourage an increase in the number of yearly inspections of manufacturing and commercial developments and places of public assembly.
7. Continue fire department review of all new development proposals for determination of fire prevention measures and fire suppression.
8. Adopt and enforce an ordinance establishing the maximum length of a cul-de-sac street.
9. Research and investigate the need for an increase in the number of paramedic ambulance units and provide the units deemed necessary.

SUB-GOAL 2

The City of Gardena shall continue, where practicable, to provide local residents with reasonable safety and well-being from "earthquakes" and other geologic hazards.

OBJECTIVES

The attainment of Sub-Goal 2 calls for meeting the following objectives:

1. Continue the upgrading and enforcement of building codes in relation to geologic hazards.
2. To provide an adequate supply of portable water during periods of seismic activity.
3. To provide the citizens with educational and technical information relevant to seismic activity.
4. To review and improve as needed, disaster preparedness and emergency response capabilities.
5. To identify all existing structures which may be considered a high risk to life and property during seismic activity.
6. To provide internal evacuation routes during periods of severe seismic activity.

POLICIES

Before the City of Gardena can meet the above-listed objectives, it must establish an action program based on the following policies:

1. Continue to update and enforce building codes for the design of new construction that resists seismic activity.
2. Prepare and disseminate essential public information concerning emergency preparedness in the event of seismic activity.
3. Continue to conduct exercises to perfect and test emergency preparedness procedures.

IV. STANDARDS

Safety standards and criteria are rules established for use as a basis for comparison in measuring unacceptable levels of risk.

The responsibility for establishing criteria and standards rests primarily with local jurisdictions. The state has established some standards but has left local government the task of enforcing them.

STANDARDS

Although there is no single unified set of safety standards, Gardena has evolved a series of standards, specifications, and regulations that apply to safety. These are incorporated into various codes and ordinances, the primary ones applicable to the scope of this element being the Building Code, Fire Code, Grading Ordinance, Zoning Ordinance, Subdivision Ordinance, and State Health and Safety Code.

The Building and Fire Codes contain building standards. Land development standards are in the Grading, Zoning, and Subdivision Ordinances as well as the Fire Code.

Building standards were designed to establish common safeguards for erection of buildings, the structural condition of existing structures, and their level of general maintenance.

Land development regulations are the principal devices by which local government can guide urban development into appropriate areas and influence its form and arrangement.

V. PURPOSE

The Safety Element, in accordance with State guidelines designed by the Council on Intergovernmental Relations, must perform the following tasks:

- A. Record the goals, objectives, and policies concerning the safety of the citizens in relation to fire and geologic hazards,
- B. Inventory, evaluate, and analyze existing and potential fire and geologic hazards.
- C. Identify and evaluate the existing level of protection afforded the citizens of Gardena.
- D. Implement programs for the correction of existing hazards and the prevention of future hazards within the City.

VI. DEFENSIBLE SPACE CONSIDERATIONS

In regards to the concept of urban space designed to inhibit crime, the utilization of concerns of residents is valid and is important but not to the degree of overriding police input as to proper land use planning in regards to defensible space.

With the current trends in criminal activity and limited avenues of deterrents and law enforcement preventative technology by the police department, maximum efforts should be put forth in acknowledgement of police department recommended subscription of guidelines.

To be able to provide for the natural capability of residents to visually survey the immediate public areas of their residential environment is a planning guideline to be given great emphasis in respect to policing criteria.

1. VISUAL SURVEILLANCE

To have the capability of visual survey from the confines of a private residence allows the citizenry the ability to observe any type of suspicious or criminal activity and to be able to make immediate telephonic contact with the police department for proper handling and investigation.

To this end, attention should be given to the planning feasibility of underground telephone line communications as well as other vital utilities to prevent criminal elements from disrupting such an emergent lifeline by any type of sabotage.

2. LANDSCAPING

In any redevelopment project, emphasis should be placed on providing for high-low landscaping. That is, landscaping which conforms to tall trees and low ground cover. All efforts should be made to refrain from the use of thick bushes. Bushes provide for concealment for any suspect attempting to elude law enforcement personnel. Further, during normal patrol procedures, large undergrowth prevents police personnel from proper observation, thus reducing security check observations.

3. CUL-DE-SACS

Consideration should be given to construction of as many cul-de-sac type roadways as is possible in residential areas so as to reduce traffic flow; thus reducing vehicle and pedestrian collisions. The cul-de-sac type road construction also inhibits criminal activities in residential areas by reducing through streets which act as vantage points for get-away purposes. It is realized that this type of engineering might affect police surveillance activities, but due to the fact that police cannot be omnipresent, this is a tangible method of providing a tactical form of control.

4. ALLEYS

Also to be addressed is proper roadway construction planning to alleviate alleys whenever practically possible. Alleys afford many types of criminal activities, especially the criminal activity of burglary. From the police standpoint, elimination of alleyways whenever possible would allow an edge for police so as to minimize concealment of suspects. Further, less alleyways would allow less vehicle access to the rear of structures, thus enabling police more preventative control of the City.

5. LIGHTING CONSIDERATIONS

Another critical factor to be pointed out in regards to the police segment of the Safety Element is lighting consideration. All commercial and residential areas should be equipped with the brightest, most intense lighting apparatus available. There is a definite correlation between crime and well-lighted areas. Criminal activity is definitely deterred to a degree when effective lighting conditions are present. From the police standpoint, mercury-vapor lights with light sensors are recommended as this type of lighting system can be activated to an off position by the police vehicles responding to criminal activity where a black-out situation is necessitated, such as a burglary in progress or a prowler in the area. The responding police officer would merely direct a spotlight at the light sensor, which would turn it off for a short duration. This type of system would afford maximum protection to the police officer.

6. BUILDING SECURITY

In relationship to building security is the aspect of effective locking devices. All structures designed under the auspices of City government should make great use of double-key deadbolt only cylinder locks to provide maximum security at times of non-use. The exception would be emergency exit doors whereby this type locking system could not be used. Private concerns involved in revamping new or old structures should be encouraged to implement the same aforementioned locking systems.

7. GLASS INSTALLATION

Also to be addressed is the crucial aspect of glass window placement in any new structures to be designed and built. All glass installation design should be to a minimum for the prevention of burglary and to discourage prowlers. If glass window design is decided to be a necessity in the architecture, then it should be placed well above human access reach. Windows could be non-opening type or able to be opened manually, as long as they are away from human accessibility.

8. HIGH-RISE MULTIPLE DWELLINGS

Attention should be given to the tactical problems confronting police personnel in the construction of large high-rise multiple dwelling units. The areas of concealment and vantage points for would-be criminals or assailants are innumerable. A study concerning Stuyvesant Town in New York (an urban apartment complex) has proven that low-rise small apartment buildings housing fewer multiple dwelling units have a minimum of criminal activities as opposed to larger projects.

9. CLOSE PROXIMITY OF COMMUNITY FACILITIES

The last point to be addressed is geographic location of intensively used community facilities. All future facilities should be constructed in close proximity and contiguous to each other for defensible purposes, if civil insurrection would occur. Police personnel would be more readily able to provide maximum security measures. Further, in a state of emergency whereby a catastrophe has occurred and emergency centers for injured are necessary, the centralized complex would be more able to coordinate a temporary shelter-type facility, if the need be.

VII. IDENTIFICATION AND EVALUATION OF EXISTING AND POTENTIAL HAZARDS

The following section of the Safety Element identifies and evaluates fire hazards within the City of Gardena and focuses on existing measures that have been taken by the City to insure the protection of life and property in the event of disaster.

A. URBAN FIRE HAZARDS

Approximately 94 percent of Gardena's 5.26 square miles has, to this date, been committed to urban uses. Local development has increased mainly through demolition of dilapidated structures. The use intensification trend which has occurred is demonstrated by the fact that 78 percent of the total net additions to Gardena's housing inventory since 1960 to 1970 have been multiple units.¹ The urban form which has evolved is susceptible to a variety of fire-related hazards.

The City of Gardena Building Code contains a classification system which ranks the degree of fire hazard associated with various occupancies within each category is included in Appendix A.

1. Fire Hazardous Buildings
2. Residential Fires
3. Multi-story Buildings
4. Hospitals and Medical Facilities
5. Indoor Public Assembly Facilities
6. Industrial Fire Hazards

¹ Basic Study for the Land Use Element.

1. Fire Hazardous Buildings

Potential fire hazards in the City of Gardena would include those buildings where the contents, ceiling height and obstruction of internal circulation are highly unfavorable and/or where there is high risk to life (Appendix A). Areas that have the greatest potential as fire hazards (target hazards) are shown on Map 1. A listing of specific areas, prepared by the City of Gardena Fire Department is presented in Table 1

2. Residential Fires

For many years the National Fire Protection Association has recorded statistics that show that most structural fires, fire related injuries and deaths occur in dwelling occupancies. Fire protection agencies are inhibited by legal restrictions and manpower limitations from making inspections of single-family residences except under special circumstances. While the impact of these limitations can be mitigated by improving current standards and practices, the inherent problems have made it necessary to concentrate on facilitating response activities.

3. Multi-Story Buildings

Multi-story buildings, by their nature have created unique problems in fire protection. Both the City of Gardena and the State of California have adopted stringent regulations on the construction of high-rise buildings to reduce potential problems.

4. Hospitals and Medical facilities

Hospitals and medical facilities, though state mandated but locally enforced requirements, have received special attention due to their large life loss potential. For example, all institutional occupancies with dependent populations must have monthly fire safety training of their staffs. In addition, sprinkler safety training of their staffs. In addition, sprinkler systems are now required in all convalescent hospitals. Large hospitals generally have auxiliary support systems which permit continued operation of life maintenance functions in case of an emergency.



TARGET HAZARDS

MAP 1



0 400 800 1200
SCALE FEET

dictated that emphasis be placed on fire prevention and impact reduction. Because the surroundings are generally unfamiliar to the occupants and the employees do not normally comprise a viable response force, measures have been taken which are designed to provide a high degree of fire resistance and to facilitate evacuation.

6. Industrial Fire Hazards

Building regulation and fire protection programs have been generally effective in reducing industrial fire hazards. However, there is some threat to those areas surrounding particularly hazardous uses. Because the Zoning Regulations specify the uses permitted for each zone, it is possible to restrict hazardous uses, such as explosive plants, to areas where the surrounding properties are not highly endangered. In specified cases, the Zoning Regulations require a Conditional Use Permit, a device through which conditions are established in order to protect surrounding life and property before the applicant is permitted a use determined to be potentially hazardous.

Table I

Target hazards within the City of Gardena

Hitco	Gardena Blvd. Shopping Area
Honeywell Bee Chemical	Redondo Beach Blvd. Shopping Area Other Major Shopping Areas
Aladdin Plastics	Card Clubs
Other Large Industrial Buildings	Hospitals
Homeowners' Emporium	Convalescent Home- Churches and Other Assembly Areas during periods of use

B. BRUSH FIRE HAZARDS

The potential of brush fire hazards are incidental to the citizens of Gardena. Presently, urban expansion has eliminated up to 94 percent of the City's natural open space. The elimination of potential brush fires, through development, has caused a natural increase in potential urban fire hazards within the City's boundaries.

1. Vacant Land

The total number of available vacant land (see Vacant Land Map) remaining by current zoning, is 139 acres.² The greatest number remaining (79 acres) is zoned for industrial use while the least number of acres (2) remaining is zoned for single-family residential use. The control of potential brush fires on the remaining vacant land is the responsibility of the land owner and if he fails to eliminate the fire hazard, then it becomes the responsibility of the fire department under the Weed Abatement Program. The first step would be to post a notice to clean property. If the property owner does not respond to this notice, then the fire department will clean the vacant land, thus eliminating the potential fire hazard, and bill the owner for work completed.

2. Public Open Space Public

Open Space is listed under five headings: (1) Parks, (2) School Playgrounds, (3) Municipal Service areas, (4) Public Utilities, and (5) Vacant Government-owned Land.³ All of the designated Public Open Spaces are maintained either by private maintenance crews or by the City maintenance crews. The elimination of any fire hazards is accomplished by the constant maintenance of assigned areas.

C. GEOLOGIC HAZARDS (Non-Seismic)

Of the Los Angeles County's 4,000 square miles, Gardena consists of 5.26 square miles. Gardena comprises .13 percent of the total land holdings and is located on what is identified as a coastal plain (See Natural Sub-region Map). The area is relatively flat in contour and is stable (see Relative Slope Stability).

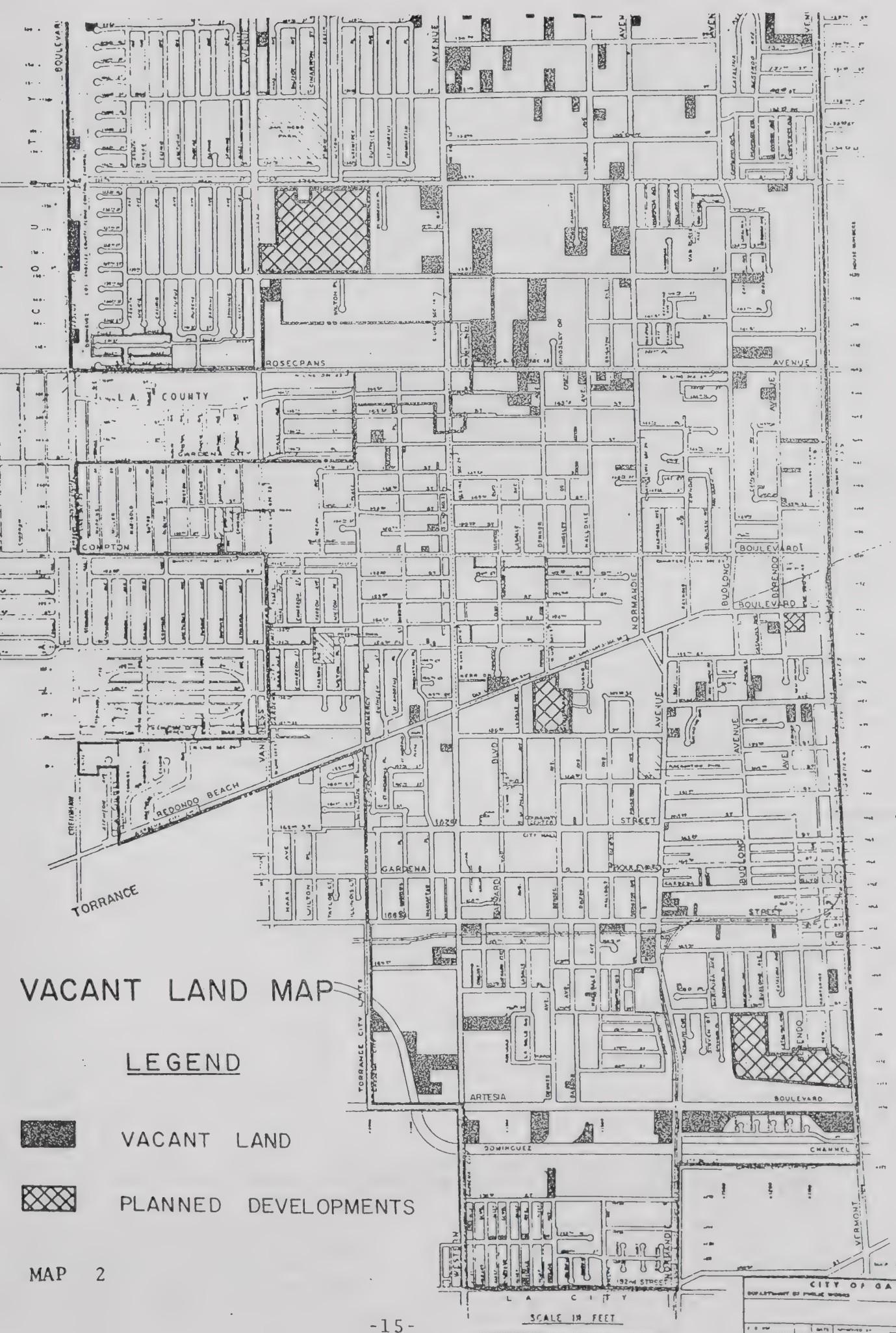
1. Slope Instability

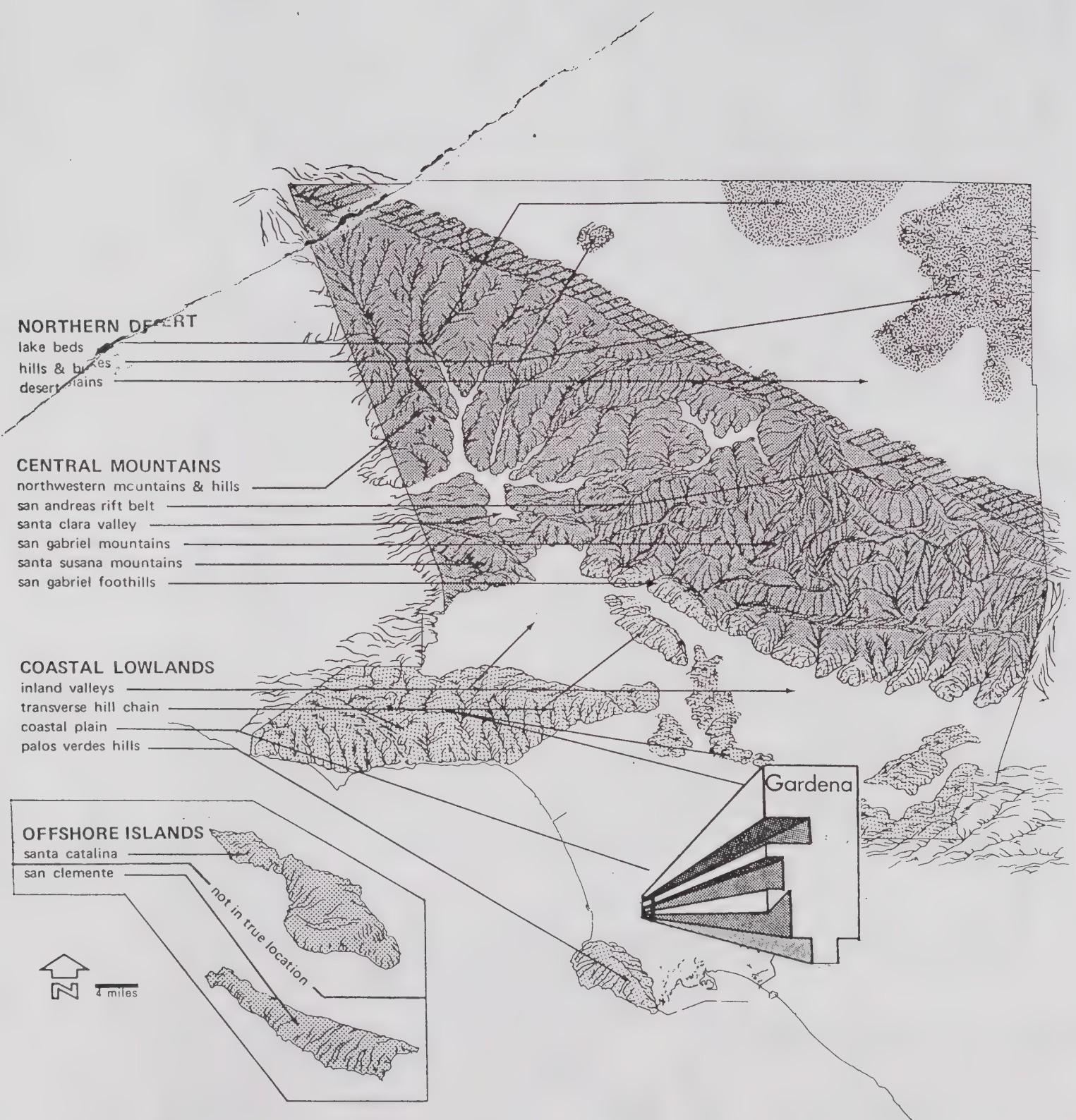
Landslides and mudslides are the common modes of slope failures. These can be triggered by surface

² Base study for Land Use Element, p. 8.

³ Existing Open Space Land, OPEN SPACE & RECREATION ELEMENT, p. 9.

CITY OF LOS ANGELES





NATURAL SUB-REGIONS

MAP 3



MAP 4

RELATIVE SLOPE STABILITY

→ INCREASING RELATIVE STABILITY ←	
7	Active landslides such as Portuguese Bend, Latigo Shore, and Amarillo Beach.
6	Inactive landslide, mapped as either suspected or confirmed. Large areas showing a high landslide density are included in this category.
5	Sea cliff subject to sliding, sluffing, and severe erosion from wave action.
4	High landslide potential
3	Moderate landslide potential
2	Low landslide potential
1	Stable areas such as valley floors, mesas, terraces, water bodies, and flood plains.

Active landslides such as Portuguese Bend, Latigo Shore, and Amarillo Beach.

Inactive landslide, mapped as either suspected or confirmed. Large areas showing a high landslide density are included in this category.

All unnumbered areas fall within category "6".

Sea cliff subject to sliding, sluffing, and severe erosion from wave action.

High landslide potential

Moderate landslide potential

Low landslide potential

Stable areas such as valley floors, mesas, terraces, water bodies, and flood plains.

Based on an evaluation of rock type, slope gradient, gross geologic structure, existing landslide density and pattern, the maximum anticipated ground response, and precipitation.

SOURCE:

Department of County Engineer
Design Division – Engineering Geology Section

NOTE:

Certain mountainous terrains such as the northwest portion of Los Angeles County and a large portion of the Verdugo Mountains have not been mapped in sufficient detail to delineate all landslides.

Landslides in the eastern Santa Monica Mountains within the Los Angeles City boundary were not plotted.

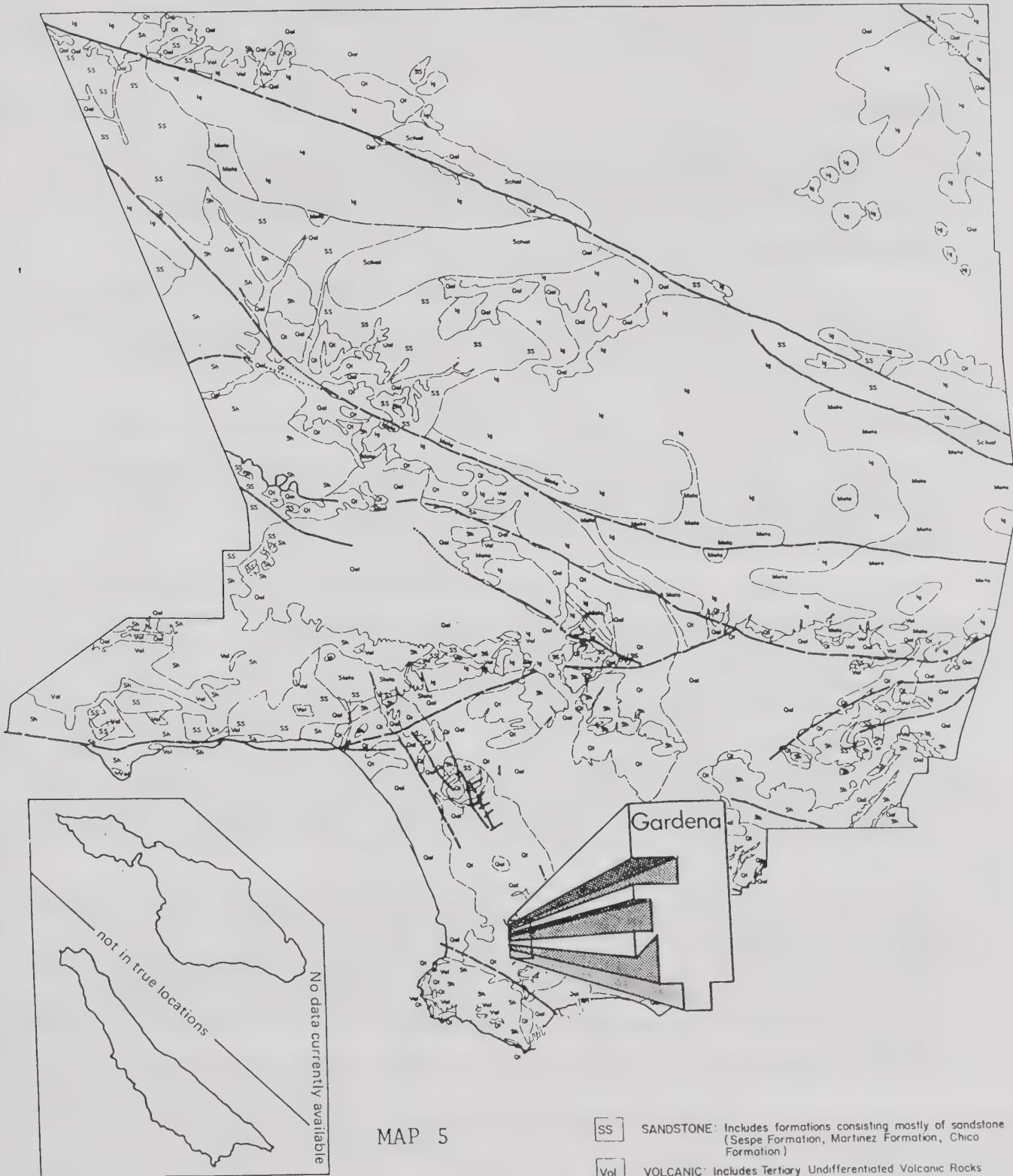


or subsurface water and generally occur where clay layers and other weak or adversely inclined strata are present. Except for the flood control basins, most of Gardena is topographically flat, so that failures of this type are not expected. The gently-sloping area in the northeast part of the city, on the west flank of the Rosecrans hills, is developed, for the most part, and drainage provided in connection with the street system tends to prevent slope failures from occurring. Moderate slopes in the flood control basins in the northwest and southeast parts of the city may be slightly more susceptible to sliding, but probably only during periods of heavy rainfall. Even if such slides should occur here, however, there would be no danger to life or property and would cause only minor problems.

2. Soils and Soil Problems

Types, Distribution, and Mapping: Geology map is provided of the soil types of Los Angeles County, including what is now the City of Gardena, at a time when the area was primarily devoted to agriculture (see Generalized Geology Map). The soils over almost all of the area encompassed by the present city limits and areas of influence consisted of loams and sandy loams. Clay adobe was mapped in the northwest square mile of the city, in the approximate area bounded by Crenshaw Boulevard, El Segundo Boulevard, Western Avenue, and Rosecrans Avenue. A small patch of clay loam was shown a short distance east of Western Avenue extending northward from 182nd Street about one-quarter of a mile. However, development of the city and grading activities involved in construction have most likely altered the nature and distribution of these soils. Predictions of soil behavior for future development should be based upon soil tests performed for specific sites and upon data and experience from past construction.

Expansive Soil: Information from Engineering and Building and Safety Division personnel of the City of Gardena indicates that all Gardena soils are expansive, but that those in the northern and southern parts are somewhat more so than those in the central parts. Present engineering and construction methods used in and by the city are adequate for controlling the problem of expansive soils, however. Awareness of the problem, adherence to proper engineering and construction practices, and adequate testing procedures on individual sites will minimize any hazards from this source.



GENERALIZED GEOLOGY

- Qal** ALLUVIUM: Includes recent stream and flood plain deposits, sand dunes, and beach deposits.
- Qt** TERRACE: Includes Pleistocene Marine and Non-Marine deposits (Lomita Marl, Timm's Point Silt, San Pedro Sand, Palos Verdes Sand, Saugus Formation and La Habra Formation)
- Sh** SHALE: Includes formations consisting mostly of shale Pliocene to Eocene in age (Pico Formation, Repetto Formation, Santa Margarita Formation, Modelo Formation, Vaqueros Formation, Tejon Formation, Los Lajes Formation, Santa Susana Formation)



- SS** SANDSTONE: Includes formations consisting mostly of sandstone (Sespe Formation, Martinez Formation, Chico Formation)
- Vol** VOLCANIC: Includes Tertiary Undifferentiated Volcanic Rocks
- Mete** METAMORPHIC: Undifferentiated Metamorphic Rocks (Meta), Santa Monica Slates (Slate), Pelona Schist (schist)
- Ig** IGNEOUS: Undifferentiated granitic rocks, serpentine, anorthosite, and related gabbroic rocks

Geologic contacts

Faults (active & potentially active)
dotted where concealed

NOTE

The purpose of this map is to present a broad picture of the generalized outcrop pattern within Los Angeles County for purposes of land-use planning. The map presents a generalized grouping of gross lithologies having similar physical properties. Its preparation relied heavily on data from the Geologic Map of Los Angeles County by the California Division of Mines and Geology.

Use of this map should be for land-use planning purposes only and should not be used for design or project evaluation.

SOURCE:

Department of County Engineer
Design Division — Engineering Geology Section

Settlement:

The sinking or settlement of a structure, fill prism, or other imposed load is usually the result of compaction or consolidation of the underlying soil, due to its low density or compressible nature. Commonly, such soils can be found in alluvial areas and in areas of uncompacted fill.

In the absence of any significant settlement problems within the City, there appears to be no need for special concern regarding its effect on land use capability, so long as the settlement potential is recognized and is appropriately minimized or corrected during construction.

3. Subsidence

Subsidence is the gradual sinking of an area due to a decrease in subsurface pressures. Subsidence is divided into three types, dependent upon the mechanism causing it: (1) around water withdrawal, (2) oil or gas withdrawal, and (3) hydrocompaction.

Ground surface effects related to subsidence are generally restricted to long surface structures such as canals, drains, and sewers which are sensitive to slight change in elevation. Since the mid-1950's, the Los Angeles County Engineer has monitored the changes in elevation due to subsidence at more than 9,000 locations. Over the past several decades, widespread subsidence of the coastal plain which Gardena is a part of, has amounted to a few inches. This may have been caused primarily by a reduction in subterranean water pressures due to excessive well pumping. However, the most common cause of subsidence within the County is the removal of natural gas and petroleum deposits from unconsolidated or partially consolidated sedimentary materials. Such subsidence has occurred in the areas of Inglewood, Torrance, Baldwin Hills, and Long Beach-Wilmington oil fields.

Hydrocompaction is a phenomenon most common in desert environments, but it has been noticed in such semiarid regions as the Antelope Valley and upper Santa Clara Valley. It usually occurs when man first applies large amounts of water, causing certain open-textured soils to lose their strength and consolidate under their own weight. Hydrocompaction is a problem to the works of man because of the abruptness and short distances over which subsidence occurs.⁴

4. Erosion

Land erosion is a natural process by which soil is removed from one area and transported to other areas largely by means of wind, gravity, and moving water.

The potential erosion hazard within Gardena is very minute, As mentioned before, the terrain is predominantly flat and the soil is classified as stable.

5. Inundation (Dams⁴. Reservoirs, Tanks, Flood Control Channels):

No dams or reservoirs are located in or near the City of Gardena so that no flood hazard exists from these sources, Damage to the Dominguez Channel and/or to the storm drains in the northwestern part of the City is most likely to be in the form of rupture of the concrete linings rather than complete blockage and with the normal low runoff is not likely to result in overflow. Even if large volumes of water were to be involved, probably only minor overflow might occur at the breaks and the greater part of the water would be confined to the still-existing channelways.

Flooding is a potential hazard in which a minor area of Gardena is involved. The Federal Insurance Administration has designated only the South Gardena Park area and three other small areas nearby as prone to flood hazard (see Flood Prone Map). The majority of land in question is owned by the state and the City of Gardena.

A minor part of the flood-prone area does touch upon some single family and multiple family residential units. Future utilization of this land should be considered in conjunction with the probability of flooding. Thus allowing minimum loss of life and property.

The Southern California Water Company maintains two water tanks in the City of Gardena. The Southern District tank, in the northern part of the City, is an older tank, of concrete construction, built at ground level, with a height of 25 feet and a capacity of 189,000 gallons. The Dalton tank, in the southern part of the City, is rather

⁴ Urban Geology, Master Plan for California, California Division of Mines and Geology, December 1971, P.47.

⁵ PROPOSED SEISMIC SAFETY ELEMENT, Leighton & Associates.



FLOOD PRONE MAP

MAP 6



0 400 800 1200
SCALE FEET

new and also of concrete construction. It is 180 feet long, 70 feet wide, and 22 feet high, with its base 12 feet below ground. It has a capacity of 2,000,000 gallons. During an earthquake, these tanks would be subject to the "sloshing" stresses of the contained water in addition to the shaking and ground failure dangers to which other structures are subject. We do not have information of the extent to which these tanks are earthquake-resistant. However, the most likely failure would involve partial rupture in a way that would produce slow leakage and release of the water. This is not estimated to produce any significant property damage or endanger lives in the vicinity of the affected tanks.

In the worst case, it can be assumed that the tank ruptures completely, releasing its full capacity all at once. In this event, water from the Southern District tank would flow westerly toward the Dominguez Channel and, because of the generally flat terrain, would probably flow at low to moderate velocity. Probably only a minor amount of erosion of exposed loose soil would occur. Water from the Dalton tank, though in greater volume, would flow only a relatively short distance southerly and easterly into the Dominguez channel and South Gardena Park flood control basin. Because of the short distance and gentle slope, it is estimated that in this case, too, only minor erosion at worst, would take place.

The chief danger would be in the initial surge at the time of tank rupture. If radial spread of the water in all directions is assumed and if the spreading sheet of water is assumed to lose destructive potential when it is reduced to a thickness of one foot, calculations show that an area of radius about 100 feet around the Southern District tank and about 200 feet around the Dalton tank could suffer damage. These areas should be maintained clear of any non-expendable facilities.

A third Southern California Water Company tank, the Chadron tank, is located just west of the City near Rosecrans Avenue. It is a fairly new steel tank of 1,500,000 gallons capacity. However, it is very near and just west of the Dominguez Channel. Since the channel lies between it and the City to catch any flow, and since the flow would be southwesterly and away from the City, rupture of this tank would pose no danger to the City of Gardena.

6. Groundwater Conditions

Aquifers: Almost all of the usable groundwater in Gardena and the part of the coastal plain in which it is located, occurs in the Pleistocene San Pedro and Lakewood formations. At the turn of the century, artesian water was present in the area (Mendenhall, 190S), which contributed greatly to the rich agricultural development. Heavy usage, however, drew down the water levels and also eventually brought about intrusion of sea water into wells of the coastal area. Control of these problems was brought about by (1) court adjudication which set up controls on pumping, (2) the initiation of barrier projects near the coast in which fresh water is pumped into a line of wells to repel saline intrusion and maintain the level of the fresh water table, and (3) importation of Colorado River and Feather River water into the area to supplement the existing groundwater supplies. Today, groundwater levels in Gardena remain relatively constant at 30 to 40 feet and 70 to 80 feet below sea level, respectively, in the upper and lower aquifers of the Lakewood formation (see Seismic Element).

Seepage Problems: Surfacing groundwater appears to have been involved in two cases in the City of Gardena. Pavement failure on Nuanu Drive was attributed to excess moisture by the investigating engineers. Also, what was described as "underground spring and quicksand condition" appeared in the basement of a building on Vermont Avenue near 163rd Street. These may be caused by local shallow perched water zones and point to the necessity for appropriate evaluation of this problem on any future sites to be developed.

VIII. EXISTING LEVEL OF PROTECTION

The following section of the Safety Element focuses on existing measures that have been taken by the City of Gardena to insure the protection of life and property from fire and geologic hazards.

FIRE DEPARTMENT

The Fire Department personnel for 1974 numbered 62 of which 52 were involved in fire suppression. As of November, 1974, the Department's fire prevention, fire fighting and rescue equipment consisted of three in-service fire engines, one reserve engine, one snorkel truck, one rescue truck, and six miscellaneous vehicles.

The Gardena Fire Department's jurisdiction extends by a mutual aid agreement to portions of nine (9) South Bay cities in Civil Defense Area G (see Civil Defense Map Area G). In case of need, the nine cities reciprocate aid and service (Mutual Aid Operation Plan). Equipment, services and facilities are made by one jurisdiction to another to prevent threats to life and property. In the event of fire, each jurisdiction has the obligation to use its own resources. If such resources become exhausted or are deemed inadequate by the affected city, requests for aid are then directed to other jurisdictions within Civil Defense Area G (see Civil Defense Map Area G). In furnishing aid, no jurisdiction is required to significantly deplete its own resources, facilities, and services. In addition, the Department has available the resources of the Los Angeles City and County Fire Departments as well as the State of California Office of Emergency Services.

For the future, the Department is looking toward the institution of automatic aid. This would provide that the closest fire station would respond to an emergency regardless of city border lines. For example, Gardena would respond to certain areas in North Torrance that are near Gardena, and Hawthorne would respond to certain areas in Gardena near Hawthorne. This would be an extension of our current Mutual Aid program.

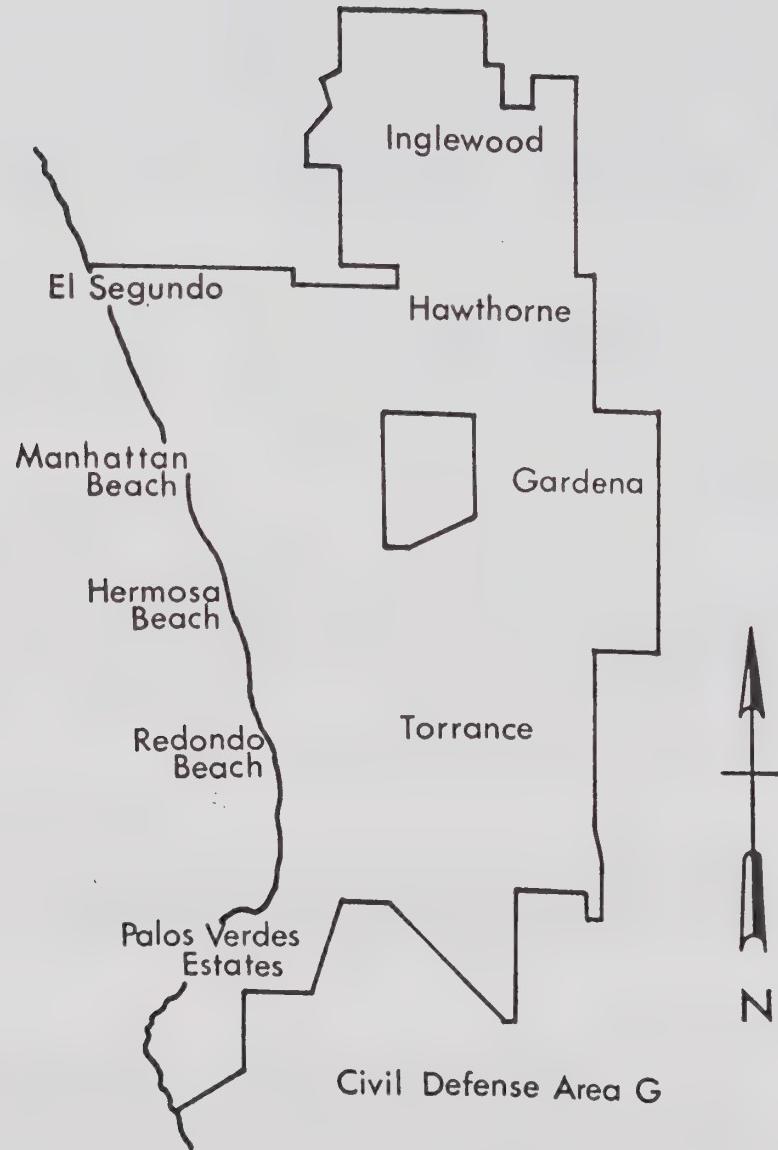
Presently, the City of Gardena Fire Department has annual inspection of manufacturing and commercial developments and places of public assembly. The inspections are conducted for the purpose of ascertaining and causing to be corrected any conditions which would tend to cause fire, or contribute to its spread, and violations of any other law or standard affecting fire safety.

CLEARANCE AROUND STRUCTURES

The minimum distance between structures is governed by the zoning ordinances and building code of the City of Gardena. All structures must be sited in accordance with the minimum setback requirements of their respective zones and types of structures.

WATER SUPPLY

The City's water distribution system facilities are comprised of those works which are required to pump, store, control and convey water after it has been delivered to the service area from local wells and via Metropolitan Water District service connections. Major components of the distribution system include storage facilities, booster pumping stations, and pipelines (primary or feeder mains, twelve (12) inches or larger in diameter; and secondary or distribution mains, less



MAP 7

than twelve (12) inches in diameter). The City's water is supplied by the Southern California Water Company.

The following fire flow requirements are in keeping with the criteria currently being administered by the City of Gardena. The values set forth in Table 2 reflect considerations of the size and type of development and the conflagration hazard expected.

TABLE 2
FIRE FLOW REQUIREMENTS

	<u>Fire Suppression Flow Rate, gpm</u>	<u>Duration of flow, hours</u>
Residential (Single family-one story)	1,000	2-4
Residential (Single family-two stories)	1,250	3-5
Residential (Two family duplex, one story)	1,500	3-6
Residential (Multiple family, 1-2 stories, less than 20,000 sq. ft.)	1,500 - 3,000	6-10
Residential (Multiple family, 1-2 stories, more than 20,000 sq. ft.)	3,500	10
Residential (Multiple family, density 3 stories and higher)	2,000 – 5,000	8-10,
Commercial and Industrial	2,000 - 5,000	8-10
Elementary School	2,000	8
Junior High School	2,500	10
High School	3,000	10

Source: City of Gardena Fire Department

IX. IMPLEMENTATION PROGRAMS

The critical factor in any planning effort is its implementation. This process, achieved through budgeted, manned programs, developed in response to adopted policies, ultimately brings about realization of the plan.

The current level of activity concentrates primarily on local programs. In future reviews and revisions of the element, the intention is to broaden and intensify investigation and analysis of these and other programs in coordination with other agencies and the general public.

A. Identification of Existing Programs

This section contains a listing of programs and activities having significant actual or potential capability for implementing the Safety Element,

1. City Programs

- Building Regulations
- Disaster Preparedness
- Fire Protection
- Grading Regulation
- Land Division Regulation
- Zoning Regulation

2. Special District Programs

- Fire Protection Districts
- Flood Control and Water Conservation
- Resource Conservation District

3. State Programs

- Fire and Rescue Emergency Plan
- Geologic Research and Mapping
- Taxation
- Water Supply Management

4. Federal Programs

- FIRESCOPE
- Forest Service
- Geologic Survey and Research
- Taxation

5. Other Implementation Activities

- Community Relations
- Coordination and Reviews

Legislation
Long-Range Planning
Mutual Assistance (Police and Fire)
Public Education
Research and Monitoring

6. County Programs

Building Regulation
Disaster Preparedness
Fire Protection
Geologic Mapping
Grading Regulation
Land Division Regulation

In addition to the programs listed above, programs contained in the Seismic Safety Element contribute to the implementation of the Safety policies.

B. Evaluation of Existing Programs

This element deals specifically with fire and nonseismic geologic hazards. Efforts at improving fire safety have been divided traditionally into the areas of fire prevention and fire response. While it is primarily through the Building Regulation and Fire Protection Programs that fire safety problems are addressed, several other programs exist which have been utilized with varying effect on reducing fire hazards. Likewise, several programs concentrating primarily on avoidance or impact reduction strategies have been developed which address non-seismic geologic hazards,

1. Urban Fire Hazards

The major urban fire hazard problem areas are: (1) fire hazardous buildings, (2) residential fires, (3) multi-story buildings, (4) hospitals and medical facilities, (5) indoor public assembly facilities, and (6) industrial fire hazards. Because each of these categories presents unique problems requiring that different emphasis be placed on the combined programs, this section will consider those programs that have specific impacts on each of the major problem areas.

a. Fire Hazardous Buildings

Fire hazardous buildings are by their existence a continuing threat to the safety of their occupants. Several factors have contributed to the perpetuation of this condition.

The current Building Regulation Programs do not require periodic inspection of older areas. The provisions of the Building and Safety Code specify the degree of deterioration that must be reached before a building is classified as unsafe. Consequently, building owners suffer no penalty by failing to improve those buildings which have not reached the specified degree of deterioration. Tax laws also have contributed to the continuing existence of hazardous buildings. Zoning regulations have a very limited effect on fire hazardous buildings, the non-conforming use provisions being essentially the only tool that can be utilized in addressing the problem.

A new precautionary measure for the protection of potential buyers has been adopted by the City Council. This precautionary measure is the Truth in Sales Ordinance. It requires exterior inspections of all types of properties and goes into effect on January 1, 1975. Site inspections of all properties will be undertaken when the property is sold and the status of the buildings will be known to the buyer before consummation of the sale.

b. Residential Fires

Fire protection agencies are inhibited by legal restrictions and manpower limitations from making inspections of single family residences except under special circumstances. While the impact of these limitations can be mitigated by improving current standards and practices, the inherent problems have made it necessary to concentrate on facilitating response activities.

As a result of state laws which extended and expanded insurance coverage for agencies responding to calls in other jurisdictions, the jurisdictional disputes that once impeded quick response have been effectively reduced. In addition, Mutual Assistance, Mutual Aid and Initial Action Zones have been effective means of providing support when one agency has required assistance in maintaining its fire protection capability.

The Land Division Regulations addresses two major impediments to adequate response by requiring proof of availability of water and a report from the fire inspector requiring that the water mains are of sufficient size to supply the required amount of water and by requiring proper access roads.

c. Multi-Story Buildings

Multi-story buildings, by their nature, have created unique problems in fire protection. A recently adopted City ordinance 985 amending the Building Code requires that buildings over four stories tall have automatic sprinkler systems. In, addition, Section 9.1.27 Building Amendments; Section 3802 (d) specifies the types of buildings which are required to have automatic Tire extinguisher systems. While this ordinance is expected to greatly alleviate the problems faced by fire suppression crews ill this type of structure, it does not apply to already existing structures.

Internal disaster preparedness programs should be given greater emphasis, particularly in those structures that do not conform with current standards.

d. Hospitals and Medical Facilities

Hospitals and medical facilities, through state mandated but locally enforced requirements, have received special attention due to their large life loss potential. For example, all institutional occupancies with dependent populations must have monthly fire safety training of their staffs. In addition, sprinkler systems are now required in all convalescent hospitals. Large hospitals Generally have auxiliary support systems which permit continued operation of Life maintenance functions in case of emergency.

e. Indoor Public Assembly Facilities

Indoor public assembly areas, by their nature, have dictated that emphasis be placed on fire prevention and impact reduction. Because the surroundings are generally unfamiliar to the occupants and the employees do not normally, comprise a viable response force, measures

have been taken through the Building Regulation Program which are designed to provide a high degree of fire resistance and to facilitate evacuation.

f. Industrial Fire Hazards

The Building Regulation and Fire Protection programs have been generally effective in reducing industrial fire hazards. However, there is some threat to those areas surrounding particularly hazardous uses. Because the Zoning Regulations specify the uses permitted for each zone, it is possible to restrict hazardous uses, such as explosive plants, to areas where the surrounding properties are not highly endangered. In specified cases, the Zoning Regulations require a Conditional Use Permit, a device through which conditions are established in order to protect surrounding life and property before the applicant is permitted a use determined to be potentially hazardous.

2. Brush Fire Hazards

The potential brush fire hazards are minimal to the City of Gardena. The 6% remaining vacant lands are either privately maintained to prevent such potential fire hazards, or the fire department under the Weed Abatement Program, after notification, will perform the necessary preventive measures.

3. Geologic Hazards (Non-Seismic)

The three most significant non-seismic geologic hazards in Los Angeles County are slope instability, erosion, and subsidence. Of these three non-seismic geologic hazards, Gardena is affected by only one, subsidence.

Subsidence with a few notable exceptions, is not considered a major problem by technical experts. The exceptions are Long Beach and Baldwin Hills where subsidence has occurred through oil and gas withdrawal, and the Antelope Valley where hydrocompaction has been identified as a potential problem. There are some possible solutions to these problems. For example, in Long Beach, subsidence has been effectively arrested by the Flood Control and Water Conservation Program through salt water repressurizing of underground aquifers and oil shales. In attempting to remedy

hydrocompaction problems, the state Water Supply Management Program employed remedial procedures involving ponding of water along, the California Aqueduct route, Inducing subsidence prior to its construction. Both of these methods are very costly, however, and can be justified at this time only if substantial benefits will be derived.

Providing an adequate base of geologic data is developed, the Zoning Program could play a significant role in regulating the type and intensity of development in hazard areas. Until recently, however, the existence of geologic hazards, unless extreme, have not weighed heavily in making land use determinations.

4. Further Recommendations:

Having identified the existing, measures that have been taken by the City to insure citizen protection from fire hazards, the Fire Department may recommend that the City take further action as follows:

- a. Provisions for adequate fire protection and rescue service. The Fire Department may want to further strengthen the City's building codes to provide for additional built-in fire protection to further reduce the fire potential in new buildings. These more stringent ordinances may include additional sprinkler protection in a greater variety, of occupancies. The 1973 Edition of the Uniform Building Code will soon be effective. The Code will require a smoke detector to be installed near all new bedroom additions and in new dwellings. This fire warning device should be a great deterrent to loss of life and mitigate the cost of fire damage.

The Fire Department has been involved in the Paramedic program since February 1973. The creation increased demand for the emergency medical care provided by the paramedics may require that the Department provide an additional paramedic unit. This additional unit will require additional personnel. The paramedics will begin transporting patients to the hospital by the end of 1974. This additional service may also require additional personnel.

The Fire Department is looking toward upgrading audio communications as recommended by Mission Research, Inc., a private consulting firm.

The Fire Department will be looking toward the institution of automatic aid. This will be a broadening of the existing Mutual Aid Program and will add to the Departments first alarm capability. Automatic Aid will provide that the closest fire engine regardless of the city boundaries, will respond to a first alarm.

As previously stated, the City of Gardena Fire Department has annual inspections of manufacturing and commercial developments and places of public assembly. The City should increase the frequency of inspections to semi-annually for manufacturing and commercial developments, and to quarterly for places of public assembly, convalescent homes, hospitals, etc., as a means of improving the fire ratings within the City,

The Fire Department will continue to develop its program involving the inspection of target hazards for the purpose of pre-fire planning. This will further acquaint all personnel with the hazards in the City.

b. Master Plan of Local Agencies

Encourage the development of risk level oriented Master Plans from the various City agencies involved in safety programs: (1) Fire Department, (2) Building and Safety Department, (3) Police Department. Master Plans in existence should be reviewed for coordination with the policies in the General Plan. Likewise, the General Plan and amendments thereto should always be coordinated with other departments for their input. Risk level refers to the amount of danger tolerated, i.e., in fire proofing a building, the amount of heat required to ignite the various construction materials; in earthquake proofing a structure, the intensity of earthquake required to collapse a structure, etc.

X. EVALUATION SUMMARY

The City facilities for fire prevention and fire fighting are considered average for cities of comparable area and population according to the Pacific Fire Rating Bureau of the Insurance Service Office.

While fire hazardous buildings bring the problem into its sharpest focus, the one overriding area of concern that underlies this entire discussion is that of non-conforming uses or conditions. The Building Codes have generally applied only to those structures built after its adoption.

Disaster Preparedness: The Emergency Operations Plan is primarily responsive to civil defense situations. The Emergency Operations Plan should be reviewed and updated to include preparedness for Geologic hazards, non-seismic Geologic hazards, and civil disorders. Once the Emergency Operations Plan is updated, a disaster drill should be conducted to test the organizational procedures of the City. Also, a Disaster Training Program for key personnel should be scheduled.

XI. USE OF SAFETY ELEMENT IN DECISION MAKING

The element is intended to provide general guidance for agencies with a public safety responsibility in Gardena. It is designed to assist officials in making decisions regarding the use of regulations and programs to meet public safety needs through capital programming, land use allocation, building and development code revisions, and general revenue expenditures. The element should also be used as a guide to developing new programs where required and influencing activities within the private sector.

XII. IMPLEMENTATION STRATEGIES

Strategies are the general courses of action that are selected upon consideration of the roles, capabilities, constraints, and goals. Key safety strategies are to:

Concentrate available resources on the most critical problems.

Maintain flexibility in implementation programs to reflect changing levels of unacceptable risk.

Place greater emphasis on preventive measures.

Encourage abatement strategies for dealing with critical existing hazards.

XIII. CONCLUSION

Gardena's opportunities to attain the goals of this element have never been greater. Increased public awareness, and expanding technical expertise can be merged to both receptive climate and the institutional framework to implement the proposals contained in the chapter.

It is essential that governmental framework of Gardena take advantage of these opportunities and provide vigorous and imaginative leadership in the field of public safety.

APPENDIX A
CLASSIFICATION OF OCCUPANCY AS TO HAZARD
(HIGH LIFE RISK AREAS)

The following is an alphabetical list used by both the Building and Fire Departments to classify hazards; groups are listed in order of declining significance with "A" Group being the greatest hazard category,

GROUP A

Assembly building with stage and occupant load of 1,000 or more.

GROUP B

Division 1. Assembly building with occupant load less than 1,000.

Division 2. Assembly building without stage and occupant load of 300 or more including such buildings used for educational purposes less than 12 hours a week or 4 hours on any day and not classed as Group C or F, Division 2.

Division 3. Assembly building with occupant load of less than 300 and with same criteria as Division 2 above.

Division 4. Stadium, reviewing stands, amusement park structures not included in any of the above.

GROUP C

Division 1. Any school building used by 50 or more persons 12 hours a week or 4 hours in one day.

Division 2. School building used by less than 50 persons with same requirements as Division 1.

Division 3. Any building used for day care by more than 6 children.

GROUP D

Division 1. Mental hospital or sanitarium, jails and buildings where personal liberties of persons are restrained.

Division 2. Nurseries for time care of 5 or more children under 5, hospitals, sanitariums, nursing homes with nonambulatory patients and similar buildings (each accommodating more than five persons.)

Division 3. Nursing homes for 5 or more ambulatory patients or homes for kindergarten aged children or over.

GROUP E

Division 1. Storage and handling of hazardous and highly flammable or explosive materials other than flammable liquids.

Division 2. Storage and handling of flammable liquids.

Division 3. Factories where loose combustible fibers or dust are manufactured, processed or generated.

Division 4. Repair garages.

Division 5. Aircraft repair hangars,

GROUP F

Division 1. Gas stations, storage garages where no repair work is done except exchange of parts and maintenance requiring no open flame or use of highly flammable liquid.

Division 2. Wholesale and retail stores, office buildings, drinking establishments having an occupant load of less than 50, combustible, storage and sales rooms for combustible goods, paint stores without bulk handling building or portions of buildings having rooms used for educational purposes beyond the 12th grade with less than 50 occupants in any room.

Division 3. Aircraft hangars open parking garage, heliports where no repair work or open flames or highly flammable liquid exists.

GROUP G

Factories, storage, sales buildings, using noncombustible, nonexplosive materials.

GROUP H

Hotels, apartments, convents, monasteries with occupant load of 10 or more.

GROUP I

Dwelling and lodging houses.

GROUP J

Division 1, Private garages, carports, sheds and agricultural buildings.

Division 2. Fences over 6 feet, tanks and towers,

Source: Uniform Building Code and Title 19,

DRAFT ENVIRONMENTAL
IMPACT REPORT FOR
SAFETY ELEMENT OF
THE GENERAL PLAN

Community Development Department
Planning Division
November 1974

Roy T. Kato, City Planner
Prepared by: Stan Soo Hoo
Planning Assistant

ENVIRONMENTAL IMPACT REPORT
FOR
THE SAFETY ELEMENT

DESCRIPTION OF PROJECT

The Safety Element of the General Plan is intended to identify and define programs to protect the community from fire and geologic hazards. Crime prevention aspects of land use development is also discussed in this Element as is allowed by the guidelines for preparation of the General Plan issued by the State Council on Intergovernmental Relations.

DESCRIPTION OF ENVIRONMENTAL SETTING

Gardena is a city of approximately 46,000 living within a 5.26 square mile area. The City is landlocked, resting on a flood plain, and surrounded by other communities in various stages of development. Mean elevation is 50 feet. The climate is moderate and rainfall averages are slightly higher than the City of Los Angeles. As part of the Los Angeles basin air quality district, Gardena shares similar problems of air pollution with the surrounding area.

The flood plain on which Gardena rests had been originally settled by ranchers and farmers taking advantage of the soil conditions and plentiful water supply. As the South Bay area grew with increased population and industrial centers, land values dictated more intense use of the land.

Gardena's geographic location near the interchange of the San Diego and Harbor Freeways makes commuter access from the Los Angeles metropolitan area easy; it is in this way that Gardena developed into a commuter-oriented community. A relative significant industrial base was encouraged due to freeway access, as well as proximity of Los Angeles International Airport, Los Angeles Harbor, and various railroad spur lines.

Gardena's agrarian past, reflected in the twenty-five (25) remaining plant nurseries, has been largely replaced by low-rise residential development with supporting areas of strip commercial. In addition, the northeast and southwest areas have attracted significant small and medium industry. Less than 6 per cent of the total land area remains vacant. For this reason, demolitions have concentrated on small residential units to provide for more intensive utilization of the land. Multiple-family rental units have accounted recently for the greatest amount of construction activity, but the overall density remains low, at 713 people per acre. In terms of population growth, Gardena still maintains a small annual increase (1 to 2 per cent annual growth rate). Recent years has seen an ethnic shift in population, the primary cause being a regional dispersion of minorities away from the central Los Angeles area.

The low architectural and topographic profile of Gardena, together with similar development of surrounding communities, makes civic identify difficult. The City tends to blend in as part of the South Bay region with little in the way of a distinctive character.

The major land use is single-family residential, accounting for over 41 per cent of the total area. A complete breakdown of land use and vacant land by percentage and acreage is listed in the Housing Element.

Designated as a General Law City in September, 1930, Gardena operates effectively under the City Council-Administrative Officer form of Government. Four City Councilmen, the City Clerk, and the City Treasurer are elected for four-year terms, while the Mayor is elected for a two-year term. As a body, the Council appoints an Administrative Officer who carries out Council policies and is responsible for the efficient operation of all municipal services.

The environmental setting of the City from the standpoint of safety is described in the Safety Element as increasing in population therefore contributing to an intensification in land usage. This increase in population and intensification in land usage has contributed to the creation of potential safety hazards.

ENVIRONMENTAL IMPACT OF PROPOSED ACTION

The overall environmental impact of the proposed action is the identification of major hazards and the reduction of these hazards to an acceptable level. A result of this action, therefore, is the improvement of the living environment within the City.

The short-term impact of the proposed element will be in the form of costs to both the City who must determine existing as well as projected inadequacies in the present safety programs and to rectify these shortcomings, as well as to certain individuals who will be encouraged to cooperate with subsequent programs which may result from the recommendations of this Element.

It is felt that this short-term cost is actually beneficial in that it should lead to an ultimate long-term impact of a higher quality of living due to mitigation of known hazards.

Three categories of proposals are contained in the document: those relating to geologic hazards, those relating to fire hazards, and those relating to crime prevention. All proposals are intended to achieve the following goals:

- Protection of life and property, and
- Reduction of adverse economic, environmental, and social conditions resulting from fires and geologic hazards.

The overall goals just stated are indisputably beneficial environmentally. In fact, one of the goals mentioned is the reduction of adverse environmental impact.

Of the three implementation proposals to achieve the goals, the fire safety proposal is concerned with anticipating and providing for future service needs, providing for the highest level of service possible by use of training programs and by insuring that emergency accesses are kept as free as possible from conflicting vehicular and pedestrian traffic. No adverse environmental impact is foreseen from the implementation of these objectives.

The proposals to mitigate geologic hazards basically are concerned with investigating the adequacy of the building codes in dealing with geologic hazards as well as programs to minimize the impact of possible seismic activity such as disbursing of information for educational purposes, review of disaster procedures, establishment of evacuation routes, and provision of an adequate portable water supply. Again, no adverse environmental impact is foreseen from the proposals. One proposal related to the mitigation of geologic hazards which might have an impact is the identification of high risk structures in the event of seismic activity. This impact could be in the form of alteration of property values since undesirable characteristics of the property would be exposed. It is felt, however, that the lives which could be saved from such action clearly overshadows the effect on property values which could result. Impact on property values is not considered to be an environmental impact, per se, and it is discussed here only to the point where the decision maker will be aware that it is a possibility. Further discussion, such as Mitigation measures, therefore, will not be included in this report.

Crime prevention proposals include such suggestions as planning for adequate visual surveillance, undergrouding of utilities, encouragement of certain types of landscaping, encouragement of cul-de-sac construction, discouragement of alleys, adequate lighting, security of buildings, etc. These ideas may appear to be repressive upon cursory examination. That is, designing for crime prevention necessarily eliminates many development options otherwise available. Such things as location of windows, types of landscaping, etc., for example, subtract from the design options of the building designer. It should be remembered that suggestions encompassed in the proposal 3re intended as a guide to crime prevention techniques. Even if only one of the proposals suggested were implemented on any given development, that development would be safeguarded to that decree. Adverse environmental impact is not foreseen from this proposal.

ADVERSE ENVIRONMENTAL EFFECT WHICH CANNOT BE AVOIDED IF PROPOSAL IS IMPLEMENTED

The proposed Safety Element contains no adverse environmental impact if implemented.

MITIGATION MEASURES PROPOSED TO MINIMIZE IMPACT

Because of the absence of adverse environmental impact, no mitigation measures are proposed. Programs provided for in the document can only enhance the environment in the City.

ALTERNATIVES TO THE PROPOSED ACTION

No Project - The alternative of "No Project" would delete the Safety Element as an element of Gardena's General Plan thereby eliminating an avenue by which the City may investigate in identifying and dealing with hazards to the City.

More Stringent Proposals - The proposals contained in the document were formulated to bring the risks anticipated for any given hazard into the "acceptable" level. More stringent measures would increase protection against hazards at a higher cost. However, it is felt that this proposal is adequate as well as realistic.

Less Stringent Proposals - As stated above, the proposals contained in the Safety Element were intended to bring risks into an "acceptable" level. Less stringent proposals would therefore render risks into an "unacceptable" level which would negate the intent of the Safety Element.

THE RELATIONSHIP BETWEEN LOCAL, SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Short-Term - The implementation of the proposals of this Element would result in costs to the City in implementing the Plan and to certain property owners who will be encouraged to cooperate with its proposals

Long-term - The long-term result of the Safety Element will be a more hazard-free living environment within the study area.

IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

No irreversible environmental changes are involved.

GROWTH INDUCING PACT OF PROPOSED ACTION

There should be no significant growth-inducing impact from the implementation of the proposals except as it relates to lives saved which should not have an impact on the environment.

WATER QUALITY ASPECTS

The proposal will have no effect on water quality.

ORGANIZATIONS AND PERSONS CONSULTED

This Environmental Impact Report was prepared by the Planning Division of the City of Gardena.

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